

**United States Department of the Interior
Bureau of Land Management and Bureau of Indian Affairs**

**Preliminary Environmental Assessment
DOI-BLM-CO-S010-2013-0046-EA**

April, 2015

**La Plata Archuleta Water District (LAPLAWD) Phase 1
Pipeline Crossing**

Location: New Mexico Principal Meridian, Colorado
T. 34 N., R. 7 W.,
Sec. 7, lot 3, SE1/4SW1/4, S1/2SE1/4;
Sec. 8, NW1/4SW1/4, S1/2SW1/4, SW1/4SE1/4
Sec. 10, SE1/4SW1/4, S1/2SE1/4;
Sec. 15 N1/2NW1/4
Sec. 16, S1/2NW1/4, SW1/4NE1/4, N1/2NE1/4,
Sec. 17, N1/2NE1/4, SE1/4NE1/4;
T. 34 N., R. 8 W.,
Sec. 4U, E1/2;
Sec. 9U, E1/2NW1/4, E1/2SW1/4;
Sec. 9, SE1/4;
Sec. 10, N1/2SW1/4, N1/2SE1/4;
Sec. 11, lot 2, N1/2SW1/4, NE1/4SE1/4;
Sec. 12, SW1/4, N1/2SE1/4;
Sec. 15, lot 1, N1/2NW1/4, N1/2NE1/4, SE1/4NE1/4.

The area described is ~2.5 acres and contains aggregate Southern Ute Indian Tribe and BLM lands.

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List of Acronyms

ASTM	American Society of Testing and Materials
AWQC	Ambient Water Quality Criteria
BA	Biological Assessment
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BOR	Bureau of Reclamation
C	Candidate Species
CAA	Clean Air Act
CAQCC	Colorado Air Quality Control Commission
CDOT	Colorado Department of Transportation
CPW	Colorado Parks and Wildlife
CDPHE	Colorado Department of Public Health and the Environment
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CNHP	Colorado Natural Heritage Program
CO	Colorado
CR	County Road
CR 510	Count Road 510
CSHPO	Colorado State Historic Preservation Office
CWA	Clean Water Act
DR	Decision Record
E	Endangered
EA	Environmental Assessment
ERO	ERO Resources Corporation
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
FNSI	Finding of No Significant Impact
ft	foot/feet
HDPE	High density polyethylene
Hwy	Highway
LAPLAWD	La Plata Archuleta Water District
lb	pound
LPC	La Plata County
LUP	Land use plan
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRCS	US Department of Agriculture, Natural Resources Conservation Service
NW	Nationwide
PCN	Preconstruction Notice
Phase I ESA	Phase I Environmental Site Assessment
PM	Particulate matter
PM _{2.5}	Particles less than 2.5 micrometers
PM ₁₀	Particles less than 10 micrometers
PVC	Polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
ROW	right of way or right-of-way

SC	State of Colorado, Species of Special Concern
SE	State of Colorado, Endangered Species
SF	Standard Form
ST	State of Colorado, Threatened Species
SUIT	Southern Ute Indian Tribe
T	Threatened
TSP	Total suspended particulates
COLORADO STATE HIGHWAY 160	United States Highway 160
COLORADO STATE HIGHWAY 160B	Bayfield Parkway or COLORADO STATE HIGHWAY 160 Business Route through Bayfield
US ACOE	United States Army Corps of Engineers
US EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

DEFINITIONS

Alternative = Other options to the proposed action by which the BLM or BIA can meet its purpose and need. The BLM is directed by the NEPA to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources...” (NEPA Sec 102(2)E)

Connected action = those actions that are “closely related” and “should be discussed” in the same NEPA document (40 CFR 1508.25 (a)(1)). Actions are connected if they automatically trigger other actions that may require an EIS; cannot or will not proceed unless other actions are taken previously or simultaneously; or if the actions are interdependent parts of a larger action and depend upon the larger action for their justification (40 CFR 1508.25 (a)(1)). Connected actions are limited to actions that are currently proposed (ripe for decision). Actions that are not yet proposed are not connected actions, but may need to be analyzed in cumulative effects analysis if they are reasonably foreseeable.

Cumulative effect = “...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions” (40 CFR 1508.7 and 1508.25).

Proposed action = A proposal for the BLM or BIA to authorize, recommend, or implement an action to address a clear purpose and need. A proposal may be generated internally or externally.

Right of Way (ROW) = The land (usually a strip) acquired for or devoted to transportation purposes. This EA addresses necessary NEPA documentation as part of the required right-of-way (ROW) application for the pipeline crossing of federal lands managed by the BLM and BIA (for the BLM lands; Serial No. COC-076312).

Phase 1 Loop = Water pipeline segments are often constructed in loops in order to ‘close’ the loop and be able to provide water from either direction and be able to test the efficacy (water quality, water quantity and pressure) of the system before adding more segments. The LAPLAWD Phase 1 loop begins and ends at the crossing of COLORADO STATE HIGHWAY 160B with CR 509. Portions of the loop have been constructed and are referred to as Phases 1A, 1B, 1C and 1D. Four segments of the loop remain to be constructed (Phases 1E, 1F, 1G and 1H) and are evaluated within this EA due to the fact that they cross lands managed by the BLM and the BIA on behalf of the SUIT. An additional segment (Phase 2A) is also being addressed within this EA as part of the cumulative effects evaluation since it is concurrently being constructed while this EA is being reviewed. Phase 2A is **NOT** dependent upon the loop and can provide water to LAPLAWD patrons regardless of the construction of Phases 1E, 1F, 1G and 1H.

The Phase 1 loop = This EA evaluates five segments (Phase 1E, 1F, 1G, 1H and 2A*) within the Phase 1 loop (described above) including an amended segment; Phase 2A. These segments are evaluated as per NEPA requirements described in the BLM NEPA handbook and other sources.

1. **Phase 1E** = The Phase 1E project is comprised of the installation of 2.7 miles of pipeline located entirely along CR 510. Phase 1E begins at the intersection of CR 510 and CR 513. It ends at the intersection of CR 510 and CR 225A.
2. **Phase 1F** = The Phase 1F project is comprised of installation of approximately 2.5 miles of pipeline and begins where Phase 1E terminates (intersection of CR 510 with CR 225A). Phase 1F travels north along CR 225A and turns east where it is placed within the COLORADO STATE HIGHWAY 160 ROW (on

the south side of the highway). Phase 1F travels 10,800 feet along COLORADO STATE HIGHWAY 160 and will cross under the highway to the north side where it will continue east for approximately 200 feet.

3. **Phase 1G** = Phase 1G lies entirely within the COLORADO STATE HIGHWAY 160 ROW corridor and begins where Phase 1F terminates. Phase 1G encompasses 2.6 miles of pipeline traveling east for 13,900 feet along the north side of the Highway where the pipeline will cross the Highway to the south side and continue east for approximately 110 feet.
4. **Phase 1H** = Phase 1H lies within the COLORADO STATE HIGHWAY 160 and 160B ROW corridors and begins where Phase 1G terminates. Phase 1H encompasses ~3.1 miles of pipeline that begins by traveling east along COLORADO STATE HIGHWAY 160 and continue northeast along the south edge of the Bayfield Parkway (COLORADO STATE HIGHWAY 160B) to the intersection of CR 509 where this line terminates at the junction with existing waterline (as part of Phase 1A).

CHAPTER 1

INTRODUCTION AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

This Preliminary Environmental Assessment (EA) has been prepared to disclose and analyze the environmental effects of the Phase 1 loop of pipeline within La Plata County as proposed by La Plata Archuleta Water District (LAPLAWD or the District). The EA is an analysis of potential effects that could result with the implementation of a proposed action and alternatives to the proposed action. The EA assists the Bureau of Land Management (BLM) and the Bureau of Indian Affairs ([BIA] as a cooperating agency) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any “significant” effects could result from the analyzed actions. “Significance” is defined by NEPA and is found in regulation 40 Code of Federal Regulations (CFR) 1508.27.

1.2 BACKGROUND

LAPLAWD was formed in response to the need for potable water of consistent quantity and quality throughout the southeast La Plata county area. Currently, most residents of the District rely on individual or community wells and water hauling for their domestic water supply. In some parts of the District, property owners have no viable well or the quality of the water is such that they have to haul their water. Water conservation measures by agricultural irrigators have impacted some of these wells. As irrigation practices have changed from flood irrigation to sprinklers, the recharge too many aquifers has decreased resulting in a lowering of the water table and a subsequent loss of production at many domestic water wells.

The District’s ‘Master Plan’ (Harris Water Engineering, Inc., 2009) and ‘Service Plan’ are linked to the Districts’ home web page (<http://www.laplawd.org>). In order to provide service to LAPLAWD customers and minimize environmental impact, the District is proposing to construct its’ pipelines within road rights-of-ways (ROW). In order to provide a more reliable system and maintain water quality, looping of the pipelines is necessary. The proposed action defined within this document, is to construct approximately 11 total miles of pipeline (1.25 miles of which cross Federal lands managed by the BLM and ~700 feet (ft) managed by the BIA on behalf of the SUIT) to eventually convey potable water as part of the ‘**Phase 1 loop**’ of pipeline within the District (**Figure 1**). The Phase 1 loop of pipeline is comprised of eight segments referred to as Phases 1A, 1B, 1C, 1D, 1E, 1F, 1G, and 1H. Phases 1A through 1D are complete and are addressed as part of the cumulative assessment. Phases 1E through 1H comprise the proposed action (**Figure 2**). The proposed action is titled **the Phase 1 loop**’ and represents four segments (phases) within the Phase 1 loop proposed to be constructed that encounter Federal lands managed by the BLM (**Figure 2**) and BIA (**Figure 3**).

BLM Tres Rios resource disciplinary staff, BIA and SUIT representatives were all consulted regarding the scope of analysis. A ROW application was submitted and considered complete by the BLM on May 7, 2014 (Right-of-Way Serial No. COC-076312) (**Appendix A; please refer to Figure A-1 for coordinates of the ROW**). The BLM was designated as the lead agency in this cooperative process. The ROW grant process for the BIA/SUIT lands crossing will follow upon completion of this EA review process.

1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the project is to provide LAPLAWD legal access across BLM lands; and to provide access across Southern Ute Indian Tribe land managed by the BIA in order to create a potable water pipeline loop from the water treatment plant located in Bayfield, CO through rural La Plata County. The need for the action is established by the BLM's responsibility under FLPMA to respond to a request for a ROW. The need is also established by the BIA's responsibility under 29 CFR 169 to respond to a request for ROW.

1.4 CONFORMANCE WITH BLM LAND USE PLAN(S) AND BIA ROW REQUIREMENTS

The proposed action is in conformance with the Tres Rios Field Office Resource Management Plan (RMP), February 27, 2015. The proposed action would be consistent with the LUP as described in accordance with the Desired Condition (2.19.7) on page II-104. (Section 2.19) .

Consistent with federal regulations found in 43 CFR 2804.25; an analysis of environmental impacts as per NEPA guidance is required before issuing a ROW grant. The BLM is responsible for issuing ROW grants across federal lands in accordance with 43 CFR 2800; while the BIA is responsible for issuing ROW grants across tribal lands in accordance with 25 CFR 169. The BLM and BIA have the authority and responsibility for imposing stipulations and regulations, as needed, to protect public safety and the environment associated with their respective land parcel crossings.

The guidance documents pertinent for preparation of this EA include: 1) the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CRF Parts 1500-1508); and 2) the BLM NEPA Handbook H-1790-1 (BLM, 2008 and 2011), and the BIA "Indian Affairs, NEPA Guidebook (IA, 2012).

1.5 RELATIONSHIPS TO STATUTES, REGULATIONS AND OTHER PLANS

Federal, state or local agencies that have permit, approval, or consultation authority for portions of the project are identified in **Table 1**. The **Phase 1 loop** traverses private lands within La Plata County, La Plata county road ROWs, BLM, BIA/SUIT and Colorado Department of Transportation (CDOT) ROW lands. La Plata County was consulted and defers environmental regulatory compliance to federal level regulations. The SUIT has been consulted to access their lands and proceed with ROW procedures. Road use and construction permits with La Plata County are being pursued concurrent with this application by the project engineering staff (Harris Water Engineering, Inc.).

Table 1. Major Permits, Approvals, and Consultations for the Project.

Agency	Permit/Approval/Consultation	Agency Action
Federal		
BIA	ROW Grant for the pipeline located along 700 feet of ROW affecting ~0.3 acres of SUII lands; and Section 106 of the National historic preservation act (NHPA).	Consider providing LAPLAWD a right of way grant to cross SUII tribal lands along CR 510.
BLM	ROW Grant for the pipeline of ~1.25 miles of ROW affecting ~2.27 acres located on BLM-managed Federal land and Section 106 of the NHPA	Consider issuance of a ROW Grant for the portions that cross federal lands managed by the BLM along CR 510 and COLORADO STATE HIGHWAY 160.
U.S. Army Corps of Engineers (US ACOE) – Sacramento District	Section 404, Clean Water Act (CWA).	Consider issuance of Section 404 Nation Wide (NW) 12 permit for working in navigable waters of the U.S. and the placement of dredge/fill material into all waters of the U.S., including wetlands.
U.S. Environmental Protection Agency (US EPA) Region 8	Section 401, CWA, Water Quality Certification	In conjunction with the SUII, consider issuance of water use/ water crossing permits.
	Section 402, CWA, National Pollutant Discharge Elimination System (NPDES)	In coordination with the State of Colorado (Colorado takes precedence) review and issue NPDES permit for discharge of groundwater associated with construction activities.
	Section 404, CWA (veto power for wetland permits issued by the US ACOE)	Review CWA, Section 404 wetland dredge-and-fill applications for the US ACOE with Section 404 veto power for permits issued by the US ACOE.
U.S. Fish and Wildlife Service (USFWS)	Section 7 Consultation under the Endangered Species Act (ESA)	Consider EA finding of impact on federally listed or proposed species.
State of Colorado		
Colorado Department of Natural Resources – Division of Parks and Wildlife	State Listed Species Consultation	Consider EA finding of impact on state listed species.
Colorado Department of Public Health and the Environment (CDPHE) – Division of Water Resources – Water Quality Control Division	Construction Storm Water Discharge Permit	Consider issuance of a permit regulating discharge of storm water from the construction work area.
	Construction Dewatering Wastewater Discharge.	Consider issuance of a permit regulating dewatering of groundwater from the construction work area.
CDOT	Utility Corridor Permit (and storm water compliance).	Consider issuance of a permit defining construction efforts and storm water compliance within the CDOT COLORADO STATE HIGHWAY 160 ROW (Phases 1F, 1G and a portion of 1H) corridor.
Colorado State Historical Preservation Office (CSHPO)	Consultation under Section 106 of the NHPA	Review and comment on activities potentially affecting cultural resources.
Tribal Governments		
SUII	Section 401, CWA	In conjunction with the US EPA, consider issuance of water use and water crossing permits.
	Right of Way – Across SUII Tribal Lands	Consider providing LAPLAWD a right of way grant to cross SUII tribal lands that encompass CR 510.
La Plata County – Road and Bridge Department.		
La Plata County	La Plata county (LPC) Engineering right of way work permit.	Consider providing the Phase 1E awarded contractor a work permit enabling them to construct the pipeline within La Plata County Road right of way corridors.
Footnotes:		
<i>Italic</i>	Clearance from USFWS and CPW were found to be unnecessary due to the finding of ‘no impact’ to resources of concern for these agencies. Clearance from CSHPO will be obtained in coordination with the submitted US ACOE Preconstruction notice permit application.	

1.6 SCOPING AND PUBLIC INVOLVEMENT

External scoping was accomplished by providing letter correspondence on October 31, 2014 to 405 ‘Interested Parties’ and described the Phase 1 loop and its potential disturbance to BLM and BIA lands. The Interested Parties included all those land owners directly and potentially indirectly affected by the proposed action. These included adjacent land owners, LAPLAWD patrons and businesses associated with the loop. Of the 405 mailings sent out, there were seven response letters. The respondents recorded their comments either by written letter or email to Tres Rios Field Office/BLM and are included in the administrative record. Copies of the scoping letters are held within the administrative files for this project.

Internal scoping was accomplished with the SUIT, BIA and BLM. The results of the SUIT scoping are summarized in the ‘Interdisciplinary Checklist’ provided in Appendix C. Scoping was provided by BIA and BLM during the iterative reviews of this document.

The external scoping did not yield any issues of concern to be addressed within this EA.

1.61 ISSUES IDENTIFIED FOR DETAILED ANALYSIS

The internal scoping identified the key issues to be addressed within this document which include;

- Access
- Air quality
- Cultural resources
- Geological resources
- Health and safety
- Invasive, non-native species
- Native American religious concerns
- Noise
- Soils
- Threatened, endangered or sensitive species and critical habitats
- Vegetation
- Wastes, hazardous and solid
- Water quality – surface and groundwater
- Wetlands/riparian zones
- Wildlife, aquatic and terrestrial

The inventory and assessment of cultural resources was accomplished by ERO resources Inc. and documented under separate cover. A complete record is provided within the project file.

1.7 ISSUES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

NEPA analysis can evaluate upwards of 30+ different types of resources depending upon the project and its scope. This project was scoped initially by the SUIT during on-site site walks of the project area. A refined list of resources to be addressed was identified and analyzed within the DRAFT version of this document. As per review of the project conditions and scope, it was determined that the following issues were considered but

eliminated from analysis largely because they are absent or eliminated during scoping with the SUIT (refer to Appendix A):

- Areas of critical concern
- Environmental justice
- Farm lands (prime or unique)
- Forest lands and management
- Fire
- Floodplains
- Rangeland management
- Recreation
- Socioeconomic values
- Visual resources
- Wild and Scenic rivers
- Wilderness

1.8 DECISION TO BE MADE

The BLM and BIA will decide whether or not to grant a Right of Way and if so, under what terms and conditions. In compliance with the BIA's responsibility for approving surface lease agreement and granting ROW's involving Tribal Trust lands the BIA Superintendent of the Southern Ute Agency, who is the responsible official for the BIA, will decide on one of the following options:

1. Adopt the BLM approval of this EA, as submitted, and issue a Finding of No Significant Impact (FONSI).
2. Require changes in the EA or proposed project.
3. Require an EIS.

The same options above apply to the BLM ROW grant process. The BLM is responsible for issuing ROW grants across federal lands in accordance with 43 CFR 2800 and has the authority and responsibility for imposing terms and conditions, as needed, to protect public safety and the environment associated with their respective land parcel crossings.

The applicant must have an approved ROW prior to conducting any surface disturbance activities. Before the ROW application is approved, the BIA must approve the EA (by adopting BLM approval) and create a FONSI and decision record. Therefore, the BIA has jurisdiction to approve the EA under NEPA, for the portion of the pipeline crossing Tribal Trust Lands.

The SUIT Range Department, on behalf of the BIA, issues stipulations for the ROW crossing only Tribal Trust portions of the project. The BIA's decision making process takes into account its responsibility for the stewardship, conservation, and protection of Indian Trust lands. Regulations to grant a ROW for pipelines are found within 25 CFR 169.25

CHAPTER 2

DESCRIPTION OF ALTERNATIVES

2.1 INTRODUCTION

This EA focuses on two alternatives;

- 1) the ***Proposed action*** which crosses ~1.25 miles or 2.27 acres of federal lands managed by the BLM and ~ 700 ft of BIA/SUIT,
- 2) the '***No Action or Private Lands crossing***' alternative in which the pipeline path routes around all federal lands yet still achieves 'the loop' configuration (refer to definitions of the Phase 1 Loop), and thereby eliminates the need for the BLM and BIA ROW approval.

In summary, this EA addresses the proposed action (**Figure 2**) which crosses approximately 1.25 miles of federal land managed by the BLM, and approximately 700 feet of lands managed by the BIA/SUIT (**Figure 3**). In addition, this EA addresses a 'No Action/Private Lands crossing' alternative where the pipeline would be constructed through private lands and would entirely avoid Federal land crossings (**Figure 5**).

An alternative route (**Figure 4**; "Preliminary Alternative – Not Evaluated") considered **but eliminated** from detailed analysis included a route that bisected a larger portion of BLM land to the east of the proposed action segment along CR 510. The alternative pipeline corridor would have potentially affected 1,535 linear feet (with an approximate width of 15 feet, and additional space required to stage equipment etc.). A site walk was conducted with the BLM, and preliminary inventory of cultural resources within this alternative footprint were determined using literature-based information. After consulting with BLM, it was determined that a pipeline corridor within this larger portion of public lands would potentially impact resources of concern. In response, the proposed action to adhere to CR 510 was found to cause fewer disturbances since the pipeline would be constructed adjacent to an existing road prism with previous disturbance, and would only affect a distance of 100 linear feet of BLM land (vs. the 1,535 linear feet described above).

2.2 PROPOSED ACTION

The proposed action is the Phase 1 loop (Phases 1E, 1F, 1G and 1H) which encompasses a total of approximately 11 miles of pipeline; ~1.25 miles of which cross federal lands. This proposed action involves the placement of buried pipeline within the CR 510 and COLORADO STATE HIGHWAY 160 and COLORADO STATE HIGHWAY 160B ROW corridors; portions of which cross federal lands managed by the BLM, BIA/SUIT and CDOT.

2.2.1 Location

The project segments addressed within this EA include Phases 1E, 1F, 1G and 1H. The pipeline construction was broken into phases by construction year and for ease of contracting requirements. The phases along COLORADO STATE HIGHWAY 160 were designed in coordination with the CDOT in order to coalesce with their future designs related to the highway corridor. The legal description for these phases is as follows; East

shoulder of County Road 510 and South shoulder of COLORADO STATE HIGHWAY 160: Section: 15 Township 34N: Range 8W Sec. 11 N2/SE, NE/SW, SE/SE; Sec. 12 N2/SE, S2/SW; Sec. 15, lot 1, T. 34N., R 7W., Sec. 7 SW/SW. These Phases cross La Plata County Road ROW corridors, Federal lands managed by the BLM (~1.25 miles) and SUIT lands managed by the BIA (~700 ft). A detailed description of linear distances of lands crossed is described by Phase below.

The location of each phase (refer to **Figure 2**) to be addressed within this proposed action is as follows;

Phase 1E = The Phase 1E project is comprised of the installation of 2.7 miles of pipeline to convey water within the District. The entire Phase is proposed to occur along CR 510. It begins at the intersection of CR 510 and CR 513. It ends at the intersection of CR 510 and CR 225A. Phase 1E crosses approximately 110' of federal lands managed by the BLM land; and 700' of BIA/SUIT lands (**Figure 3**).

Phase 1F = The Phase 1F project is comprised of installation of approximately 2.5 miles of pipeline and begins where Phase 1E terminates (intersection of CR 510 with CR 225A). Phase 1F travels north along CR 225A and turns east where it would be placed within the COLORADO STATE HIGHWAY 160 ROW (on the south side of the highway). Phase 1F is proposed to travel 10,800 feet along COLORADO STATE HIGHWAY 160 and would cross under the highway to the north side where it would continue east for approximately 200 feet. Phase 1F is proposed to cross ~2,830 feet of federal lands managed by the BLM.

Phase 1G = Phase 1G lies entirely within the COLORADO STATE HIGHWAY 160 ROW corridor and begins where Phase 1F terminates. Phase 1G encompasses 2.6 miles of pipeline traveling east for 13,900 feet along the north side of the Highway where the pipeline would cross the Highway to the south side and continue east for approximately 110 feet. Phase 1G proposes to cross ~3,638 feet of federal land managed by the BLM.

Phase 1H = Phase 1H proposes to lie entirely within the COLORADO STATE HIGHWAY 160 ROW corridor and would begin where Phase 1G terminates. Phase 1H encompasses ~3.1 miles of pipeline that begins by traveling east along COLORADO STATE HIGHWAY 160 and continue northeast along the south edge of the Bayfield Parkway (COLORADO STATE HIGHWAY 160B) to the intersection of CR 509 where this line terminates at the junction with existing waterline (as part of Phase 1A).

2.2.2 Pipeline Description and Planning

The proposed action encompasses approximately 11 miles of pipeline to be laid along CR 510 and COLORADO STATE HIGHWAY 160 and COLORADO STATE HIGHWAY 160B ROWs. This pipeline route provides two important functions;

- 1) provides a segment of pipeline along CR 510, COLORADO STATE HIGHWAY 160 and COLORADO STATE HIGHWAY 160B to service patrons along these road segments to tap into for potable supply (including fire districts), and
- 2) provides an essential segment to the District as a whole.

Most of the entire pipeline would be buried in a trench within the La Plata County ROW adjacent to CR 510, and the CDOT ROW along COLORADO STATE HIGHWAY 160 and COLORADO STATE HIGHWAY 160B. Borings are accomplished when segments of pipe need to cross the road or bisect a ditch or stream channel. The segment/phase specific pipeline descriptions are summarized below.

Phase 1E = The Phase IE water pipeline consists of approximately 10,150 linear feet of 12 inch diameter DR18 C-900 pipe and 4,000 linear feet of 12 inch diameter DR14 C-900 pipe installed within the county road ROWs. Two directionally drilled or bored pipeline crossings under irrigation ditches with casings for the 12 inch lines, fittings, appurtenances, valves, fire hydrants and service taps are also included in this project.

The proposed pipeline would be installed within the CR 510 ROW. The proposed pipeline is on the east side of CR 510 from the intersection of CR 510 and CR 513 at the termination point of the Phase 1D waterline project and continuing north for approximately 8,000 feet and then due west along the north side of CR 510 for an additional 6,150 feet. This project entails a total of roughly 2.7 miles of 12" diameter water pipeline buried with 4 feet of cover and averaging 7 feet off of the edge of the roadway.

Phase 1F = The Phase IF water pipeline consists of approximately 13,450 linear feet of 12 inch diameter DR18 and DR 14 C-900 pipe installed within the CR 225A and COLORADO STATE HIGHWAY 160 ROWs. One directionally drilled or bored pipeline crossings under COLORADO STATE HIGHWAY 160 with casing for the 12 inch lines, fittings, appurtenances, valves, fire hydrants and service taps are also included in this project.

The proposed pipeline would be installed within the east side of the CR 225A ROW and the south side of the COLORADO STATE HIGHWAY 160 ROW. The pipeline is proposed to run due north on the east side of CR 225A from the intersection of CR 510 and CR 225A at the termination point of the Phase 1E waterline project and continue north for approximately 2,400 feet and then due east along the south side of COLORADO STATE HIGHWAY 160 for an additional 10,800 feet where the pipeline will cross under Highway 160 to the north ROW where it would then continue east for approximately 200 feet. In addition, an 8" pipeline crossing COLORADO STATE HIGHWAY 160 east of 225A will be installed to accommodate CDOT's widening project. This project entails a total of roughly 2.5 miles of 12" diameter water pipeline buried with 4 feet of cover and averaging 10 feet off of the edge of the roadways.

Phase 1G = The Phase IG water pipeline consists of approximately 14,110 linear feet of 12 inch diameter and 80' of 8-inch diameter DR18 or DR 14 C-900 pipe installed within the COLORADO STATE HIGHWAY 160 ROW. One directionally drilled or bored pipeline crossing under COLORADO STATE HIGHWAY 160 with casing for the 12 inch line, all associated fittings, appurtenances, valves, fire hydrants and service taps are also included in this project.

The proposed pipeline would be installed within the CDOT ROW on the north side of US Hwy 160. The pipeline would be located in La Plata County and would run generally east-west from the termination point of the previous project Phase 1F waterline project and continue east for approximately 13,900 feet where the pipeline would cross under Highway 160 to the south, within the ROW where it

would then continue east for approximately 110 feet. An 80 foot length of 8-inch pipeline will extend north from the main line along the east boundary of CR 223. This project entails a total of roughly 2.6 miles of 12-inch diameter water pipeline and 80 feet of 8-inch line buried with 4 feet of cover and averaging 10 feet off of the edge of the roadways to accommodate CDOT's widening project.

Phase 1H = The Phase 1H water pipeline consists of approximately 16,580 linear feet of 12 inch diameter DR18 or DR 14 C-900 pipe installed within the COLORADO STATE HIGHWAY 160 and Bayfield Parkway ROWs. One directionally drilled or bored pipeline crossing under an irrigation canal with casing for this 12 inch line, all associated fittings, appurtenances, valves, fire hydrants and service taps are also included in this project.

The pipeline would be installed within the CDOT ROW on the south side of US Hwy 160. The pipeline would be located in La Plata County and would run generally east-west from the termination point of the previous Phase 1G waterline project and continue east for approximately 13,800 feet where the pipeline would continue to the intersection of Hwy 160 and Bayfield Parkway (Highway 160B) and then east along the south edge of the Bayfield Parkway to the intersection of CR 509 where this line would terminate at the junction with the existing waterline. This project entails a total of roughly 3.14 miles of 12" diameter water pipeline buried with 4 feet of cover and averaging 10 feet off of the edge of the roadways.

Planning the pipeline is an iterative, coordinated process between LAPLAWD, land owners, over-sight engineers/regulators, LAPLAWD patrons/board of directors etc. Before starting construction, LAPLAWD would finalize engineering surveys of the pipeline placement in relation to the county road and CDOT ROW, and complete land or easement acquisition.

2.2.3 Pipeline Construction

The pipeline would be buried subsurface into a trench that is aligned with the adjacent county road or US Highway. Construction specifications defining pipeline installation methods are defined in detail on the LAPLAWD Construction web page (<http://www.laplawd.org/construction.html>). Abbreviated pertinent steps involved with trenching and boring are described below.

Trenching:

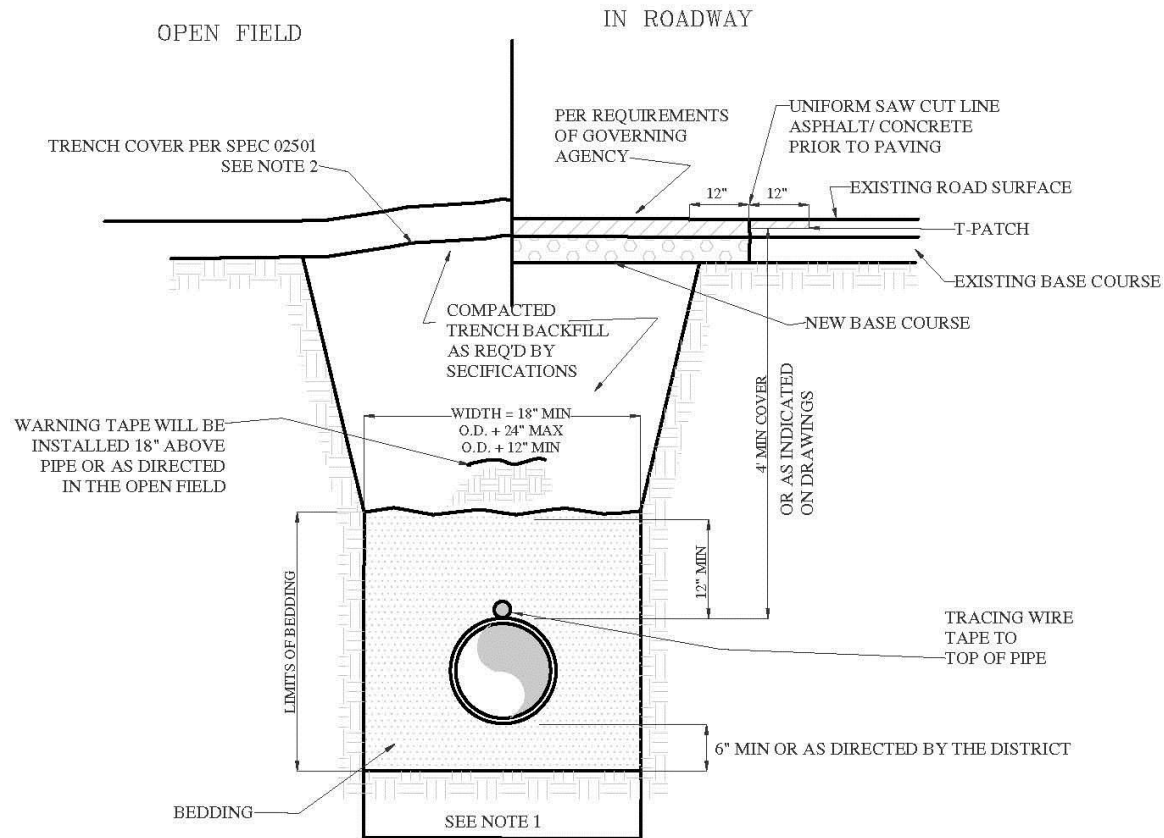
LAPLAWD defines standard trenching work specifications within Section 02226-7 3.02 'Trenching'; (LAPLAWD, 2012a). The pipeline will be laid into a trench 'real-time' with excavation efforts. A cross section view of a typical pipeline detail is shown below within the included "**typical trench section detail**" (source; LAPLAWD, 2012a). Typically, the pipeline will be 12-inch C900 PVC with at least 4 ft. of cover for prevention of freezing. As shown in the below cross section view, trenches are compacted and filled in order to control water pooling and loss. This is especially emphasized for the project areas characterized by wetlands.

The pipe would be placed with use of a track-hoe excavator which will likely create a footprint of disturbance of ~15 feet wide. Given the need to ‘confine’ movement and activity to the ROW corridor, this footprint width is a standard maximum width of impact. Typical trenching methods for pipeline placement are as follows;

- trenching operations shall be performed at a distance which will be backfilled and compacted the same day,
- top soil is scraped and retained in a row along-side trench for later replacement; (top soil may include vegetation such as wetland plants – if top soil is saturated it may be placed on pallets in order to retain water during excavation efforts),
- subsurface soils are excavated and retained in a separate row from top soil and used for later pipeline compaction;
- trench is excavated to appropriate depth and allowed to stabilize to determine if water seepage will occur,
- bottom of trench is tamped and filled with granular bedding,
- pipeline is placed, sealed to previous pipeline segments and marked with a tracer wire (allowing the pipeline to be located after burial).
- Backfilling shall begin as soon as the conduit is in approved condition to receive it and shall be carried to completion as rapidly as possible,
- pipeline trench is filled in reverse order with subsurface materials filled in and compacted, followed by top soil and retained vegetation (where appropriate). Surplus excavated material shall be disposed of at designated spoil sites in a legal manner, in full compliance with applicable codes and ordinances.
- impacted site is contoured and leveled in order to achieve baseline slope configuration and eliminate any pooling/ditch areas,
- top soil is mulched and reseeded once heavy equipment activity is complete.

Boring:

LAPLAWD defines boring work specifications within Section 02634 and 02635 ‘Carrier Pipe and Bored Casing, Directional Drilling’; LAPLAWD, 2012). The various ditches crossed as part of the District pipeline construction have differing requirements.



NOTE:

1. IF UNSTABLE MATERIALS OR UNACCEPTABLE CONDITIONS ARE FOUND IN TRENCH BOTTOM, OVEREXCAVATE AND REPLACE PER SPECIFICATIONS.
2. MINIMUM COVER TO BE BELOW FINAL GRADE.
3. REFER TO SPECIFICATION 02226 FOR BACKFILL AND BEDDING REQUIREMENTS DIRT DAM, AND BACKFILL REQUIREMENTS.
4. TRENCH EXCAVATIONS WITHIN 4 FEET OF ROADWAY EDGE REQUIRE BACKFILL WITH FLOWABLE FILL OR 95% COMPACTION REFERENCE SPECIFICATION 02226-3.08f.
5. WITHIN WETLANDS AREA, RETURN TOPSOIL AND WETLANDS PLANTS TO ORIGINAL PROFILE. COMPACT THE TRENCH FILL MATERIALS ADEQUATELY IN ORDER TO ENSURE WETLANDS ARE NOT DRAINED DUE TO THE TRENCH PROVIDING A PREFERENTIAL DRAIN FOR WATER TRAVEL (SEE DETAILS SHEET 4).

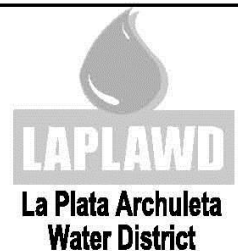
TYPICAL TRENCH SECTION DETAIL

LA PLATA ARCHULETA WATER DISTRICT STANDARD DETAILS TYPICAL TRENCH SECTION

DATE: 4/10/2014	SHT: 03	REVISIONS		
CHECKED BY: BS	SCALE: N.T.S.	NO.	DESCRIPTION	DATE
DRAWN BY: MG				

HARRIS WATER ENGINEERING INC.

954 East Second Ave.
Durango, Co. 81303
970-259-1028



2.2.4 Construction Reclamation and Re-vegetation

Reclamation and re-vegetation of federal lands affected by construction is defined by the ‘owning agency’. These requirements will be made part of terms and conditions of the ROW grant issued by either BLM or BIA where appropriate; and incorporated into the LAPLAWD standards for construction identified in the contract. For those lands that occur within County ROW corridors; LAPLAWD defines post-construction reclamation requirements within their “Standard Specifications for Water Line Construction” (LAPLAWD, 2012a; web page (<http://www.laplawd.org/construction.php>)). All LAPLAWD contract specifications outline steps for “*Protection of Property*” which defines the requirement that any contractor must “*protect all public and private property... avoid damage to property... restore and bear the cost of any public or private improvement..etc.*”. In summary, the disturbed setting is to be returned to its pre-existing conditions of vegetative cover, contour/topography etc.. In order to achieve this goal, earth work (trenching) involves the following components;

- Prior to construction, ‘only those trees and shrubs shall be removed that are in actual interference with excavation or grading work and such removal shall be subject to approval by the Engineer (Section 02100 3.02 ‘Clearing and Grubbing; LAPLAWD, 2012a).
- Debris resulting from the clearing and grubbing operations shall be disposed of at spoil sites in a legal manner, in full compliance with applicable codes and ordinances (Section 02100 3.04 ‘Clearing and Grubbing; LAPLAWD, 2012a).
- During trenching operations; ‘native topsoil shall be removed and stockpiled to be used for topsoil replacement when possible. Where imported topsoil is required, it shall be clean sandy loam, free from sulfates or alkali (Section 02501 2.02‘Trench Surface Restoration’; LAPLAWD, 2012a).
- Depth of topsoil shall be determined by actual existing field conditions or as directed by the Engineer (Section 02501 2.02‘Trench Surface Restoration’; LAPLAWD, 2012a).
- During reclamation; ‘grass seed and mulch shall conform to the requirements of CDOT, La Plata County or the City, or whichever is the governing agency in the area of the planting’ (Section 02501 2.05‘Trench Surface Restoration’; LAPLAWD, 2012a).
- Seed mixtures shall be compatible with the immediately surrounding vegetation, and seed mix to be approved by the BLM or BIA prior to application (Section 02501 2.05‘Trench Surface Restoration’; LAPLAWD, 2012a).
- During reclamation of open areas (such as those encountered within the Federal lands crossings); the contractor shall replace trees, shrubbery, flowers, ground cover in kind to match existing features as approved by the Engineer (Section 02501 3.07‘Trench Surface Restoration’; LAPLAWD, 2012a).
- During reseeding efforts (Section 02501 3.07‘Trench Surface Restoration’; LAPLAWD, 2012a).
 - All areas to be seeded shall be made substantially clear and free of weeds, briars, sticks, loose stones greater than 1-inch, and all other debris detrimental or toxic to the growth of grass.

- The surface soil in all areas to be seeded shall be in a condition favorable for the germination and growth of grass seed. A minimum of ½-inch and maximum of 1-1/2 inches of surface soil shall be in a loose condition.
- Soil preparation operations shall be directional along the contours of the areas involved.
- Seed shall be applied at a time approved by the Engineer when conditions are favorable for germination.

2.2.5 Pipeline Cost

This proposed action is comprised of pipeline to be placed within county road or highway ROW corridors. The county road and highway corridors are predominantly comprised of fill material or settings previously disturbed from the adjacent road way. This fill material represents a consistent media that is relatively easy to trench and place pipelines through. Some exceptions do occur when other utilities, groundwater or natural geologic outcroppings are encountered (or features requiring a bore such as ditch or stream crossings). Furthermore, the topography of the proposed action has been surveyed (historically from previous county road or highway construction efforts; and currently re-verified by LAPLAWD survey efforts) in order to determine contour and altitude changes which significantly affect the ability of a pipeline to transport water. The proposed action is comprised of a setting with minimal gain or loss of altitude, which means the pipeline will not need to install ‘pump stations’ etc., to assist in maintaining needed water pressure along the pipeline.

The proposed action was projected to cost an amount of ~ \$60.00/foot of pipeline. Since there are no ‘additional or supporting features’ (i.e. pump stations); the cost is directly related to the single variable of a ‘pipeline length (foot)’.

At the estimated \$60.00/foot; with a total length of 11 miles; the estimated cost for the proposed action would be \$3,484,810.94. The costs associated with planning, inspection, monitoring and over-sight all folded into the cost/foot estimate.

2.2.6 Pipeline Construction Schedule

If approved, it is anticipated that the Phase 1E portion of the proposed action is planned for construction in late fall of 2015. Construction-related permits such as ROW work agreements with La Plata County and storm water and/or construction dewatering permits through CDPHE are the responsibility of the contractor. Federal-level Clean Water Act compliance (and other regulatory requirements) are addressed by LAPLAWD (i.e. US ACOE Nationwide 12 Preconstruction Notice permits and EPA/SUIT CWA 401 Certificates). The remaining Phases that comprise the proposed action (Phases 1F, 1G and 1H) would be planned for construction after Phase 1E. It is anticipated that construction would occur sometime in 2015.

The proposed action encompasses Phase 1E, 1F, 1G and 1H of the Phase 1 loop. Each Phase is to be constructed in ‘sequence’ to each other allowing for concurrent construction efforts where funding is available. An estimated timeline for the sequence of activities involved (once the decisions are issued by the BLM and BIA and ROW grants are issued) with pipeline construction is as follows (using Phase 1E and 1F as examples below);

- **Day1:** Phase 1E Project Posting and Announcement of Contract Bidding.
- **Day 31:** (one month later) – Phase 1E Contract Bids submitted.
- **Day 45:** Announcement of Phase 1E contract ‘Notice to Proceed’ (provided to successful bidder)
- *~Day 62: Phase 1F Project Posting and Announcement of Contract Bidding (if funding is available).*
- **Day 138-169:** Construction completed approximately 3 – 4 months following notice to proceed; reclamation/re-vegetation to be ongoing as part of construction efforts.
- **~Day 200 – 224:** Allow ~ 2months post-construction for construction closure/inspections/testing and reclamation/re-vegetation monitoring.

TOTAL time required for **one** Phase of pipeline construction = 200-224 days or ~6.5 – 7 months. A conservative total estimate for the completion of Phases 1E, 1F, 1G and 1H would require ~26 – 28 months assuming NO OVERLAP in the phases of construction. It is possible, if funds are available; to begin the process of a second phase concurrently with an ongoing phase. If this were achievable, approximately six to nine months of time could be eliminated from the total schedule for completion of ALL phases.

2.3 NO ACTION/PRIVATE LANDS CROSSING

If the proposed action were to be denied, the LAPLAWD Water District would have to re-route the pipeline around the Federal lands through private lands. This alternative is referred to as the ‘**no action/private lands crossing**’ alternative and was mapped as shown within **Figure 5**. **Figure 5** was scoped by LAPLAWD as a ‘feasible’ alternative as it meets the purpose and need of this document and would **potentially** provide water to the essential areas requiring District service; and can maintain adequate water pressure (albeit through the use additional facility features). This alternative would traverse open ground with significant topography that introduces the need to install pump stations in order to maintain adequate pipeline pressure.

This no action/private lands crossing alternative shares common features with the proposed action as follows;

- Methods for trenching and boring
- Methods for reclamation and re-vegetation

Therefore, in the interest of brevity; these methods are not revisited within this Section. However, this alternative introduces substantial changes as compared to the proposed action. There are construction challenges associated with this proposed route that would impact the following;

- Pipeline Description and Planning
- Pipeline Cost
- Pipeline Construction Schedule

- Impact to natural resources and aesthetics

The following subsections describe the differences between the no action/private lands crossing vs. the preferred proposed alternative in regard to pipeline location (and service to patrons), cost, and construction schedule. The differing impacts between the alternatives to natural and cultural resources will be addressed as part of the impact assessment.

2.3.1 Location

The location of the no action/private lands crossing alternative (**Figure 5**) differs from the proposed action by entirely avoiding Federal lands crossings. The pipeline would still follow certain portions of the CR 510, COLORADO STATE HIGHWAY 160 and COLORADO STATE HIGHWAY 160B ROW corridors in areas outside of the Federal lands that coincide with the proposed action. The no action/private lands crossing alternative path was selected as a feasible alternative with the shortest possible pipeline route to achieve connection to essential components along CR 510, COLORADO STATE HIGHWAY 160 and COLORADO STATE HIGHWAY 160B. By routing around the federal lands, the pipeline is routed ‘away’ from potential LAPLAWD patrons along CR 510 and COLORADO STATE HIGHWAY 160. It would however, ultimately connect back to the main lines along the county road and highways which are essential to the District as a whole.

In summary, this alternative may preclude the ability of certain patrons to connect to the District; or at the very least; would introduce significant cost to these potential patrons by having to construct significant tap lines to the pipeline segment.

2.3.2 Pipeline Description and Planning

The no action/private lands crossing pipeline follows the proposed action pipeline pathway except when Federal lands are encountered. At these junctures; the no action/private lands crossing pipeline is routed entirely around the Federal lands and traverses across open private ground. Where possible, previously disturbed corridors (i.e. roads and utility corridors) were chosen for the no action/private lands crossing pipeline route in order to minimize environmental impact. However, the availability of these pre-disturbed settings was not uniform throughout the setting. Ultimately, ‘the shortest path’ possible was chosen in order to maintain pipeline integrity and minimize impact and cost. The final path chosen yielded a total distance of ~13.7 miles (refer to **Figure 5**).

Review of these private ground settings identified several variables that would affect pipeline planning, construction, cost and schedule. These variables include;

1. Access
2. Topography
3. Soils/Geology/Groundwater

The ability to gain access across private lands is dependent upon the ability to negotiate ROW agreements between individual land owners and the LAPLAWD. The terms, timeline and cost associated with each land

owner ROW agreement is highly uncertain and cannot be scoped within this document. This component may introduce significant impacts to the construction timeline and potential unforeseen costs.

The private land traverses gain and lose significant altitude due to the topography. In order to maintain adequate pressure within the pipeline; the system would require at least two pump stations to maintain adequate pressure and flow. Pump stations are costly (~0.5M\$/each) and impact a larger footprint of ground than a pipeline segment.

As previously mentioned, a standard approach that LAPLAWD has taken towards pipeline construction is to lay pipe within county road ROW corridors in order to ease ROW access issues and construct within already disturbed settings. This alternative navigates around county road/highway ROWs by traversing open private lands. Private lands typically lack available surveying information essential to planning of pipelines to meet engineering standards (soil types, underlying geology and depth to groundwater and bedrock). Therefore there may be a need to survey the natural resources along this pathway in order to fill these data gaps.

The planning phase for this alternative will be significantly extended and complicated as compared to the proposed action. Access across private lands is uncertain and dependent upon each land owner. The necessary access/ROW agreements and surveys introduce additional elements of time and cost to this alternative as compared to the proposed action.

2.3.3 Pipeline Construction

The no action/private lands crossing alternative pipeline construction will have similar trenching and boring methods previously described for the proposed action (please refer to **Section 2.2.3**). Where the no action/private lands crossing alternative diverges from the county road and highway corridors across private lands; construction will be affected by natural setting features of vegetation, soils, geology and groundwater. The no action/private lands crossings have significant increase in elevation which requires the pipeline pressure to be increased with the installation of two pump stations. In addition, it is likely that the topographic relief introduced by geologic outcroppings through the private land areas will require additional excavation efforts.

The no action/private lands crossings (unlike the proposed action) coincide at times to historic roads or utility corridors (for ~5 miles of the proposed 6.2 miles of pipeline on private lands). Since the pipeline requires perpetual maintenance, re-vegetation is limited to those species that won't affect the integrity of the pipeline trench (grasses, forbs and shrubs).

Due to the topographic issues associated with the no action/private lands crossing alternative, two pump stations would be required in order to maintain pipeline water pressure. The exact location of these stations is unknown and beyond the scope of this evaluation. However it is likely they would occur within the private lands areas within close proximity to the topographic relief areas causing water pressure issues.

2.3.4 Construction Reclamation and Re-vegetation

The no action/private lands crossing alternative would have similar reclamation and re-vegetation methods previously described for the proposed action where the two alternatives coincide along county road and highway corridors. However, where the pipeline crosses private lands; reclamation and re-vegetation efforts

would be altered in order to establish species that would not affect the integrity of the pipeline and trench. Review of the private lands site setting using aerial photography indicates that these areas are moderately vegetated with shrub species which are cohesive with the pipeline trench. Since LAPLAWD standard practices for ‘protection of property’ define the need to reclaim settings back to their natural (baseline) character; the reclamation goals would be to achieve vegetation recovery goals (along with noxious weed control). The need to reclaim these private land settings to pre-disturbed conditions introduces elements of time and cost to the construction of this alternative which are included in the ‘pipeline cost’ estimates provided in the following subsection.

2.3.5 Pipeline Cost

The total length of pipeline associated with the no action/private lands crossing alternative is ~13.7 miles. A large portion of the pipeline route associated with the no action/private lands crossing alternative coincides with the proposed action. Therefore the same cost/foot of \$60.00 would apply where the two alternatives overlap. This applies to ~ 7.4 miles of pipeline; which would equate to a cost of \$2,344,320.00. It was estimated that each foot constructed across private lands would cost ~\$55.00/foot, not including any cost for acquiring easements. There are ~6.2 miles of pipeline proposed to traverse the private lands which would yield a cost of ~\$1,800,480.00.

In addition to the pipeline construction costs, there would be costs associated with the two pump stations. It was determined that two pump stations would be required in order to maintain suitable pressure. Each pump station costs ~\$0.5M; for a total of \$1,000,000.00.

In summary the line item costs for the private lands crossing are as follows;

- Pipeline
 - Coinciding with the proposed action (7.4 miles at \$60.00/foot) = \$2,344,320.00.
 - Across private lands (6.2 miles at \$55.00/foot) = \$1,800,480.00.
- Pump Stations
 - Two pump stations at a cost of \$500,000.00/station = \$1,000,000.00.

The Grand Total cost for the no action/private lands crossing alternative would be ~\$5,144,800.00, which excludes any costs of acquiring easements.

2.3.6 Pipeline Construction Schedule

The proposed action (refer to **Section 2.2.6**) summarized the construction schedule for each Phase under standard pipeline construction methods which rely upon construction within county road and highway ROW corridors. Under this approach, construction of a single Phase would require 6.5 – 7 months of time; with a grand total amount of time for the entire proposed action of 26 – 28 months. This no action/private lands crossing alternative physically affects the pipeline route and distance within Phases 1E, 1F and 1G. The introduced elements of having to gain access and survey the areas also introduce significant time to these

affected Phases. It was estimated that each phase affected by the private lands crossings would require at least two additional months of planning time in preparation for construction. Because the District plans to construct the system as funds become available, the additional cost would require the addition of at least two more phases for construction. Therefore Phases 1E, 1F and 1G would require 8.5 to 9 months for completion. The addition of Phases 1H, 1I and 1J, would add an additional 6.5 to 7 months. If each Phase were to be constructed in sequence (assuming no overlap); the total amount of time required for the no action/private lands crossing alternative would be:

Phase 1E (8.5 – 9 months) + Phase 1F (8.5 – 9 months) + Phase 1G (8.5 – 9 months) +

Phase 1H (6.5 – 7 months) + Phase 1I (6.5-7 months) + Phase 1J (6.5 – 7 months) = 45 – 48 TOTAL months.

If funds are available, it is possible to overlap the phases and gain six to 12 months of time.

2.4 SUMMARY COMPARISON OF ALTERNATIVES

Two alternatives were reviewed as part of this NEPA analysis. The proposed action involves construction of four Phases of pipeline along CR 510, COLORADO STATE HIGHWAY 160 and COLORADO STATE HIGHWAY 160B. This alternative covers 11 miles of ground and crosses Federal lands. It would require approximately 26 – 28 months to construct; and will cost ~\$3,484,810.94 to build.

The no action/private lands alternative would occur if BLM and BIA were to deny the ROW grant. This second, potential alternative was evaluated that would route around Federal lands. This alternative coincides with the preferred proposed alternative for approximately 9.7 miles; and diverges into private lands entirely avoiding the Federal lands crossings and would require approximately 45 – 48 months to construct, at a cost of ~\$5,144,800.00.

Table 2 summarizes the key differences between the two action alternatives; 1) the proposed action and 2) the no action/private lands crossing alternative.

Table 2. Comparison of Alternatives

Category	Proposed action	No action/private lands crossing alternative
Pipeline Description and Planning	Pipeline would be laid along CR and Highway ROW corridors for a total of ~11 miles.	Pipeline would be laid along CR and Highway ROW corridors, and would route around Federal lands into private lands for a total of 13.6 miles.
Pipeline Cost	\$3,484,810.94	\$5,144,800.00
Pipeline Construction Schedule	26 – 28 months	45 – 48 months

CHAPTER 3

AFFECTED ENVIRONMENT

3.1 INTRODUCTION

The potentially affected environment for the **proposed action** was analyzed by an interdisciplinary team associated with Grayling LLC (a third party consultant to the project). Based upon the ‘Interdisciplinary Team Checklist’ (BLM, 2008 sections 6.7.1, 6.7.2 and 8.3.5; provided in **Appendix C**) the following resources were considered absent or insignificant and did not qualify for further analysis within this EA;

- Areas of critical concern
- Environmental justice
- Farm lands (prime or unique)
- Forest lands and management
- Fire
- Floodplains
- Rangeland management
- Recreation
- Socioeconomic values
- Visual resources
- Wild and Scenic rivers
- Wilderness

The above resources were excluded from analysis within this EA due to the fact that these resources were absent or omitted as per BIA or BLM review and coordination with the SUIT (refer to agency coordination documented in Chapter 5). Certain resources (i.e. noise and air quality) will only be affected during the construction period anticipated to occur in 2015 - 2016. The impacts to these resources are minimized due to the construction standards and specifications set forth by LAPLAWD (LAPLAWD 2012a and 2012b) within their contract requirements, and also by coordination of work permits in the ROW. Regardless, for conservative purposes, the temporary impacts to air quality, health and safety, noise and wastes attributable to construction activities are described as part of the affected environment.

The remaining resources found to be potentially impacted (refer to checklist provided in **Appendix C**: however, as per BIA review; several resources were added regardless of the initial scoped list constructed during a site-walk coordination with SUIT) are as follows;

- Access
- Air Quality
- Cultural Resources
- Geological resources
- Health and Safety
- Invasive, Non-Native Species
- Native American Religious Concerns
- Noise
- Soils
- Threatened, Endangered or Sensitive Species and Critical Habitats
- Vegetation,

- Wastes, hazardous and solid
- Water Quality – Surface and Groundwater
- Wetlands/Riparian Zones
- Wildlife, Aquatic and Terrestrial (including migratory birds)

It should be noted (as summarized in **Table 1**) that impacts attributable to dredge and fill of wetlands, to tribal lands, to surface and groundwater quality; will all be ‘permitted’ as part of necessary regulatory compliance procedure for these activities (please refer to further description provided in **Chapter 5**).

The following subsections describe the resource setting for the proposed action area as a whole. This was accomplished in order to document the ‘connected’ project components to the proposed action as per NEPA requirements. **Table 3** (provided at the end of the Chapter) summarizes the quantitative comparable features of Invasive, non-native species, vegetation, wetlands/riparian zones, and wildlife habitats for both the proposed alternative and the no action/private lands crossing alternative.

3.2 ACCESS

The proposed action lies within county road and US highway ROW corridors. Access through these lands requires coordination with the land owner and/or ROW authority. Phases 1A, 1B, 1C and 1D were all within corridors managed by La Plata County, CDOT and the Town of Bayfield. Access agreements were coordinated with each entity and ROW work agreements were acquired by the contractors.

The proposed action crosses Federal lands managed by the BLM and BIA. ROW grants require coordination with these managing agencies and the SUI. To-date the following efforts have been accomplished to gain access across these lands;

- coordination with the SUI to identify the ROW requirements,
- on-site walk of SUI/BIA lands crossing to define scope of NEPA analysis (refer to checklist documented in **Appendix C**),
- completion of a Cultural Resources Assessment (ERO, 2013) and Biological Assessment (Grayling LLC, 2013) to address impacts to biological resources on SUI lands (reviewed and accepted by SUI Natural Resources staff) (refer to **Appendix D**),
- coordination with BLM to identify ROW requirements,
- on-site site walk of alternatives to CR 510 with the BLM and SUI,
- coordinated correspondence and meeting(s) held with BIA and BLM to identify combined approach for NEPA analysis,
- survey of BIA and BLM lands crossings; including wetlands, threatened and endangered species, critical habitats, vegetation, soils/geology and cultural/historic resources,

- design and survey of entire proposed action footprint to determine affected environment and project impacts, coordination and overlay of findings with CDOT in order to develop cohesive plans for pipeline routes along CDOT COLORADO STATE HIGHWAY 160 expansion plans, and
- BLM ROW application submittal (ROW application Serial No. COC-076312 – provided in **Appendix A**).

This EA document represents a component of both the BIA and BLM ROW grant process. This document will be reviewed and revised and incorporated into the decision process for the ROW grant. Additional components are required for the ROW process (ROW grant application to the BIA/SUIT) that will be addressed once the NEPA process has been addressed.

3.3 AIR QUALITY

Air quality is affected by the presence of air pollutants. The US Environmental Protection Agency (US EPA) is charged with developing and enforcing regulations that govern air quality in accordance with the 1970 Federal Clean Air Act (CAA). In Colorado, EPA delegates authority to the Colorado Air Quality Control Commission (CAQCC). The lead air quality planning agency for the project region is CDPHE. LAPLAWD contract standards and requirements hold the construction contractor accountable to control dust and air quality issues (GC-6 ‘General Conditions’; LAPLAWD, 2012b).

The pollutants that are most relevant to the project setting are those that can be traced to construction activities. These include particulates which are measured in three forms: total suspended particulates, and particulate size fractions of PM₁₀ and PM_{2.5}. Current air quality indicators for the project area (Bayfield, CO) indicate that ambient air quality is ‘good’ based upon measures of total suspended particulates, lead (in TSP), carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone, particulate matter (PM₁₀ and PM_{2.5}) (USA. Com December, 2014). There are no CDPHE air quality areas of concern within the project setting (Colorado Environmental Public Health Tracking: December, 2014).

CDOT EIS assessment for air quality along the COLORADO STATE HIGHWAY 160 corridor was addressed since the proposed corridor expansion could increase traffic and potentially affect air quality. Baseline conditions documented within the EIS indicate that the ‘COLORADO STATE HIGHWAY 160 corridor is in attainment for all EPA criteria pollutants’ (CDOT, 2006).

3.4 CULTURAL RESOURCES

The cultural resources within the project footprint had been previously documented within Havel, R.M; 1992 . In order to verify the historic work and to address the BIA/BLM concerns, ERO Resources Corporation (ERO) conducted a cultural resource inventory of the proposed action footprint using BIA/BLM guidance and oversight. A copy of the entire document is provided in the project record and within Appendix B to this report (ERO Resources Project #4907, 2014). Results of the survey for the project area are as follows;

- Approximately 11.1 miles of pipeline are included in these phases of the project. Total acreage is 73.27. Approximately 9.9 miles of the project area had been surveyed previously; the remaining 2.2

miles were surveyed at the Class III level. The survey area included a 25-foot buffer on either side of the centerline.

- The project resulted in documentation of two new segments of historical ditches, and re-visitation of nine previously recorded sites: four segments of historical ditches, one segment of a historical road, two prehistoric lithic scatters, and two prehistoric open camps. Two sites are recommended supporting segments of field or officially eligible ditches and one site is recommended needs data. The remaining eight sites are either non-supporting of the resource's eligibility or determined not eligible.

Cultural resources were inventoried and addressed by ERO resources Inc. The methods and results were reviewed by BLM and BIA. The results determined that there were no resources impacted by the proposed alternative and were provided to the Colorado State Historical Preservation Office for clearance. The report and clearance documentation are provided under separate cover within the project file. Even though this issue was eliminated due to the lack of impacted resources, summaries of the findings are provided within this document.

3.5 GEOLOGICAL RESOURCES

The project occurs within the Colorado Plateau physiographic province within an area dominated by sedimentary rocks of the Paleozoic era (Topper et al., 2003). While Paleozoic formations can yield fossil resources, the area encompassing the project is comprised of homogenous sedimentary features (Animas formation). The Animas Formation is composed of terrestrial variegated conglomeratic sandstones and shales. The thickness of the formation ranges from approximately 1,800 feet around the Florida River to more than 2,600 feet thick east of Bayfield (Fassett, 1971; URSGWC, 2000 as cited in CDOT, 2006).

The project area is located in a physiographic region that can have a high-yield natural gas and coal-bed methane production. The Fruitland Formation coal-beds range in thickness from less than 10 to more than 70 feet throughout the basin. Coal was mined in the Fruitland outcrop areas approximately 4 miles North of COLORADO STATE HIGHWAY 160/US 550 in the 1900s (Fassett, 1971; URSGWS, 2000 as cited in CDOT, 2006). The immediate project footprint does not encompass a formation that yields natural gas seeps or coal outcrops.

Geological resources are impacted by the pipeline construction. The project involves excavation of a trench approximately 6 feet in depth. The pipeline would be 12-inch C900 PVC with at least 4 ft. of cover for prevention of freezing. The pipe would be placed with use of a track-hoe excavator which would likely create a footprint of disturbance on federal lands of 15 feet wide by 800 feet long along CR 510, and ~3.6 miles long along COLORADO STATE HIGHWAY 160. The road shoulder in which the pipeline would be placed has been physically affected with the placement of fill material to build the road prism base. It is likely that native geologic materials are covered by at least 12" of this fill material. As a result, approximately 5 feet of depth into native materials would result from pipeline construction.

3.6 HEALTH AND SAFETY

Since the project occurs within CR and COLORADO STATE HIGHWAY 160 ROWs, there is the potential for health and safety to be affected by the construction of the pipeline. The presence of construction equipment along traffic corridors can present a hazard to public safety. However, LAPLAWD construction activities are

permitted by the County and CDOT (depending upon ROW corridor status) which dictate standards of protection for public safety during construction. Construction site activity is actively inspected by LAPLAWD, the County and CDOT. Furthermore, LAPLAWD construction standards follow state guidelines for health and safety. LAPLAWD contract requirements define that each contractor follows OSHA, state, federal and local standards for health and safety (refer to GC-6 and GC-17 within posted LAPLAWD construction standards, LAPLAWD 2012a and b).

3.7 INVASIVE, NON-NATIVE SPECIES

This proposed action setting is physically disturbed from contouring and fill placement in order to build the road prism. In addition, the road shoulder slopes into storm-water channels in order to control erosion. An in-field survey of the proposed action setting revealed that there are minimal native plants present within the proposed action footprint. However, invasive and/or non-native species are present due to opportunistic colonization and reclamation reseeding. Inventory of the project setting indicated the presence of cheatgrass (*Bromus tectorum*), diffuse knapweed (*Centaurea diffusa*), Canada thistle (*Cirsium arvense*) and other grasses (likely reseeding species). More than 90% of the ground is bare and affected by road sand/salt deposition. The project area has documented over 10 invasive species (EDDMapS, 2013).

Management of noxious weeds (plant species officially designated by the state as being non-native to Colorado and have negative impacts on crops, native plant communities, livestock and or the management of natural or agricultural systems) is required under Federal Executive Order 13112 – Invasive Species, Federal Noxious weed Act (7 USC 2801), State of Colorado Executive Order D 006 99 – Development and Implementation of Noxious Weed Management Program and the Colorado Noxious Weed Act (Colorado Revised Statutes (CRS) Title 35, Article 5.5). LAPLAWD requires ‘protection of property’ standards of all contractors which define the control and eradication of invasive species post-construction.

3.8 NATIVE AMERICAN RELIGIOUS CONCERNS

Consultation was conducted with the SUIT and 24 other Native American tribes and pueblos with potential cultural affiliations in the vicinity of the project area. No religious concerns or issues were identified.

3.9 NOISE

Noise along the project area is primarily associated with traffic. Construction of the proposed project would add to this ambient level. CDOT analyzed the ambient noise attributable to traffic along the COLORADO STATE HIGHWAY 160 corridor. Levels measured were found acceptable to adjacent land uses which were defined as lands supporting residential use. CDOT has defined Noise Abatement Criteria which define noise levels if approached or exceeded, should be abated. LAPLAWD has adopted state and federal requirements for the protection of human health and the environment which encompasses control of noise. These requirements are outlined in the LAPLAWD contract requirements issued to awarded contractors (LAPLAWD, 2012a and 2012b).

3.10 SOILS

The soil survey for La Plata County (produced by the NRCS) provides general information on the characteristics of soils found within the proposed action corridor (NRCS 1982 and 2001). As shown in **Figure 6** and summarized by site surveys and CDOT, 2006;

- Soils in the area occupy varying landforms including drainage-ways, floodplains, valley bottoms, low terraces, mesa tops, ridge tops, and hills with side-slopes ranging from 0 – 65%.
- Soils range in depth from shallow to deep and have formed on glacial outwash, residuum, slope alluvium, floodplains, and terraces.
- Major uses of the soils within the project area include range and wildlife habitat, irrigated pasture, sources of construction material and home/business sites.

The soils within the proposed action are classified as “zyme-rock outcrop complex, 12-65 percent slopes” (NRCS, 2001). Depth to paralithic bedrock ranges from 6 – 20 inches and soils are well drained. Soils are not prone to ponding or flooding. A typical profile consists of: 0 – 4 inches: Clay loam, 4 – 10 inches: Silty clay loam, clay loam, clay, 10 – 14 inches: weathered bedrock (NRCS, 2001). In general, these are deep, excessively drained soils that are found on foothills, terraces, ridges, terrace escarpments and breaks. These soils consist of moderately fine to moderately coarse textured soils and rock outcrops that have low soil strength and a high shrink-swell potential (NRCS, 1982 and 2001).

3.11 THREATENED, ENDANGERED OR SENSITIVE SPECIES AND CRITICAL HABITATS

As part of the scoping for this project, the US Fish and Wildlife Service (USFWS), BIA, BLM, Colorado Parks and Wildlife (CPW) and Colorado Natural Heritage Program (CNHP) were contacted to determine status of Federal and State species and habitats of concern. For this EA, a total of 16 Federal (USFWS) threatened and endangered species, 11 state (CPW), and 38 CNHP species of interest were evaluated to determine if the proposed action would impact the species or their habitat (USFWS Western Colorado Ecological Services Field Office, 2011 and 2014; CPW, 2014; Lyon et al., 2004 and March et al., 2004; a copy of the USFWS correspondence is provided in **Appendix D**). In addition, the BIA/SUIT provided list of federal species of and the BLM Colorado State Director’s Sensitive Species List (for the southwest field offices/districts) were reviewed (also provided in **Appendix D**). Many of these species overlap/coincide with the Federal and State lists.

Results of the in-field surveys of the proposed action indicated the following;

- The proposed action encompasses minimal natural setting features. The project would take place in the CR 510, COLORADO STATE HIGHWAY 160 and COLORADO STATE HIGHWAY 160B road shoulder which is physically disturbed and contains mostly invasive/non-native vegetation species. This setting does not provide any habitat resource of significance for any of the Federal or State species of interest. Results of the literature queries indicate that the proposed action area is not of importance (or historic use) to any species of interest.

- The proposed action can provide resources of potential use by wildlife such as migratory birds. Field surveys did not identify any habitat suitable for any Federal or State species of interest. Furthermore there were no direct observations of species of interest during any of the field surveys. Results of the literature-derived queries indicate that the project area is not a natural setting of importance (or historic use) to the species.

3.12 VEGETATION

There are minimal areas containing native plants present within the proposed action footprint. Invasive and non-native species are dominant due to the presence of historic physical disturbance. However, the proposed action does encounter several vegetation communities along the CDOT ROW along the COLORADO STATE HIGHWAY 160 corridor. **Figure 7** depicts the vegetation communities within 1,000 feet of the pipeline. A summary of the vegetation character of the project area by vegetative community is shown in **Figure 7** and summarized as follows;

- Wetlands are areas inundated or saturated with water at or near the surface of the soil for a sufficient duration during the growing season to develop characteristic soils and vegetation. The types of wetlands that occur within the proposed action are described in Section 3.10. Most wetlands feature emergent meadows dominated by grasses and sedges, but smaller areas of marsh vegetation and scrub-shrub wetlands also occur.
- Pinyon-juniper Woodlands dominate the proposed action area. The vegetation includes diverse understory of shrubs, forbs, and grasses; however much of the ground surface is typically bare. Shrub species found in this setting include big sagebrush (*Artemisia tridentate*), mountain mahogany (*Cercocarpus montanus*) and some mixes of Gambel oak (*Quercus gambelii*), pinyon pine (*Pinus edulis*) and juniper (*Juniperus osteosperma*, *J. Scopulorum*). Forbs and succulent species include knotweed (*Polygonum spp.*) fleabane daisy (*Erigeron spp.*) banana yucca (*Yucca baccata*), pricklypear (*Opuntia spp.*), plateau cholla (*Opuntia whipplei*) and claret cup cactus (*Echinocereus triglochidiatus*). Common grasses in this community include blue grama (*Bouteloua gracilis*), Indian ricegrass (*Oryzopsis hymenoides*), mutton grass (*Poa fendleriana*) and western wheatgrass (*Elymus smithii*).
- Sagebrush shrubland is dispersed throughout the proposed action occupying the valleys and areas with gentle slopes while the pinyon pines and junipers occupy the steeper slopes. In addition to big sagebrush, common shrub species include rubber rabbitbrush (*Chrysothamnus nauseosus*), broom snakeweed (*Gutierrezia sarothrae*), and antelope bitterbrush (*Purshia tridentate*). Grasses and forbs common to the open areas within this community include squirreltail (*Elymus elymoides*), western wheatgrass (*Pascopyrum smithii*), blue grama (*Bouteloua gracilis*), Indian ricegrass (*Oryzopsis nymenoides*), sand dropseed (*Sporobolus cryptandrus*) prairie junegrass (*Koeleria macrantha*), penstemon (*Penstemon spp.*) hairy goldenaster (*Heterotheca villosa*) and alyssum (*Alyssum spp.*).
- Agricultural lands/Irrigated pasture areas are primarily irrigated and sub-irrigated hay meadows and pastures, dominated by pasture grasses and grass/alfalfa mixtures.

- Developed Areas include areas occupied by houses, businesses, areas of pavement, yards, corrals and other disturbed settings. These occur throughout the proposed action for primarily residential settings.

Specifically, the CR 510 segment of the proposed action crosses pinyon-juniper woodlands and developed areas. The COLORADO STATE HIGHWAY 160 corridor crosses all of the above described communities. The COLORADO STATE HIGHWAY 160B corridor is narrow and crosses storm-water affected wetlands and developed areas.

3.13 WASTES, HAZARDOUS AND SOLID

In inventory of potential hazardous materials and hazardous wastes along the project area was conducted using Phase I Environmental Site Assessment (Phase I ESA) methods as defined within the American Society of Testing and Materials guide (ASTM 2000a and b). The ASTM Phase I ESA process identifies the presence/absence of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products that may be present on or immediately adjacent to the property being assessed. The Phase I ESA practice relies upon records research of existing Federal, State, and County records to determine current and historic land uses that may contribute to the presence/absence of hazardous waste spills or sources (referred to as ‘recognized environmental conditions or RECs’) (sources include: US EPA, 2014a, 2014b, 2014c, 2014d, 2014e, 2014f, CDPHE, 2014, CDLE, 2014 and La Plata County, 2014).

Results of records research did not yield the presence of any historic land use within or adjacent to the property that would yield the presence of RECs. While there are numerous spills that have occurred along the length of COLORADO STATE HIGHWAY 160, these spills have all been controlled or abated as per the CDPHE spills database. Results of the above listed queries did not identify any site (CERCLA/CERCLIS or RCRA), emergency response action (i.e. spill) or leaking underground storage tank to be of concern. The only facilities within proximity to the proposed water pipeline recorded by State resources that receives managed wastes (household and recyclable) would be the La Plata County landfills located in Bayfield (4496 CR 223) and Marvel (1765 CR 134). However these two facilities do not manage hazardous waste and do not need to be evaluated. In summary, the records research did not identify any hazardous waste sites or management facilities closely associated with the proposed action.

There is the possibility that hazardous wastes can be spilled accidentally during construction. However, LAPLAWD has adopted state and federal standards for the protection of public health and environment which addresses how a contractor is responsible for the cleanup and abatement of any hazardous substance release (refer to GC-6 and GC-17 within the LAPLAWD construction requirements; LAPLAWD, 2012b).

3.14 WATER QUALITY: SURFACE WATER AND GROUNDWATER

The water quality resources that occur in the proposed action include floodplains, perennial and intermittent drainages, and groundwater resources. The proposed action area is bracketed by two perennial drainages; the Florida River to the West and the Los Pinos River to the East. The proposed action does not cross either drainage. The proposed action does cross the Dry Creek drainage which is intermittent and contained within culverts bisecting the Colorado State Highway 160.

Dry Creek (and all other tributaries to the Los Pinos and Florida rivers) has a defined Colorado state water quality classification of: Aquatic Life Cold 2, Recreation 1a and Agriculture. Aquatic life Cold 2 waters are not capable of sustaining a wide variety of aquatic life due to physical habitat, water levels or flows, or uncorrectable water quality conditions. Recreation Class 1a waters have suitable quality to allow for contact uses such as recreational activities. Agriculture waters are suitable for irrigation of crops and watering of livestock.

The proposed action bisects several irrigation ditches including the McClure Murray, King and Pioneer ditches. LAPLAWD would acquire crossing agreements with each ditch company to allow for each crossing. Ditches are 'bored' under in order avoid impact to the ditch itself.

The project area occurs within the San Juan groundwater structural basin which encompasses a Precambrian crystalline rock formation aquifer. The Colorado Resources Division has claimed the area surrounding the project to be 'water critical' where availability is low and water quality may be compromised. Water quality in the San Juan Basin aquifers is highly variable with total dissolved solids concentrations typically increasing with depth. Naturally occurring concentrations of iron, chloride, fluoride and total dissolved solids may locally exceed the drinking water standards (Topper, et al., 2003).

For the proposed action efforts; surface water and groundwater quality will be protected during construction activities since the storm-water discharges will be managed through best management practices as required for the Colorado Department of Public Health and the Environment (CDPHE) construction storm-water and/or dewatering permit. Similarly, if groundwater is encountered; discharge of groundwater will also be permitted under the CDPHE construction discharge permit system.

3.15 WETLANDS/RIPARIAN ZONES

Wetlands are areas that are inundated with water at a frequency or duration sufficient to support a prevalence of vegetation typically adapted to saturated soil conditions. Many wetlands are protected under the CWA (Section 404) as waters of the U.S. and "special aquatic sites," and are under the jurisdiction of the US ACOE for Section 404 permitting. Isolated and irrigation-fed wetlands may not be protected by Section 404 subject to the US ACOE determination.

It is LAPLAWD policy to avoid impacts to wetlands where possible and restore unavoidable impacts for all wetlands regardless of jurisdictional status. All previously constructed Phases (Phase 1A, 1B, 1C & 1D) were permitted by the US ACOE under the Nationwide Utility Corridor No. 12 preconstruction notice (PCN) permit process (refer to Section 1.4 above). The proposed action will be similarly submitted to the US ACOE for a PCN permit prior to construction.

A comprehensive inventory and delineation of wetlands and riparian habitats within the proposed action was completed by Pat Drew, Wetland Biologist in 2013 and 2014 (see project file for inventory). Wetlands were delineated using US ACOE guidelines that require positive evidence of wetland hydrology, hydrophytic vegetation, and hydric soils (Environmental Laboratory, 1987). The standard survey corridor was comprised of the entire CR or US Hwy ROW corridor; and expanded in areas to address possible realignment of the ROW where needed. Due to the timing of the proposed construction, verification of wetlands and submittal for the US ACOE permit will take place prior to construction.

Initial wetland information was gathered from existing documented resources (i.e. National Wetlands Inventory; Map report of Southwest Colorado for the 1:100,000 Map Units of: Moab NE, Moab SE, Montrose NW, Montrose NE, Montrose SW, Cortez NE, Cortez SE, Durango NW, and Durango SW. [US Fish and Wildlife Service, Denver, CO November 1993]; and CDOT, 2006). Once the proposed action was surveyed, the geospatial line drawings will be overlain with the surveyed wetland delineation polygons. The results will enable the accurate quantification of square footage impacts to wetlands where the pipeline trench co-occurs with a wetland feature. During this mapping phase, amendments to the pipeline location can be made if significant impacts are noted.

Results of the inventory and resources evaluation identified wetlands that occur throughout the proposed action corridor. The distribution is closely linked to high groundwater, seeps/springs, drainages and irrigation. The largest wetlands occur in broad valleys along COLORADO STATE HIGHWAY 160 where there is high groundwater. Several major types of wetlands were identified based on geomorphic characteristics and hydrologic source. A summary of the major types is as follows;

- Wet Valley wetlands: occur on slightly sloping terrains in areas of high groundwater that are located along streams and irrigation ditches. Wet valley wetlands are classified as palustrine emergent wetlands and contain small patches of shrubs or trees with soils comprised mostly of clay, clay loam or loamy clay.
- Wet Floodplain wetlands: occur in narrow floodplains where either perennial or intermittent streams are present. The main source of wetland hydrology is alluvial groundwater and soils are saturated throughout much of the growing season. This wetland type occurs along Long Hollow and Dry Creek and are typically comprised of a mixture of palustrine scrub-shrub and palustrine emergent vegetation. The riparian is dominated by narrow leaf cottonwood.
- Irrigation ditch wetlands occur within or alongside irrigation ditches. They are found throughout the proposed action and are typically narrow and linear. They are classified as palustrine scrub-shrub or palustrine emergent with dominant vegetation of sandbar willow and marsh emergent species along the banks.
- Roadside ditch wetlands occur in depressions along roads and highways that capture runoff and storm-water sources. Most are within upland areas and are isolated. The vegetation can include palustrine scrub-shrub (willow shrub) and palustrine emergent species.

A vegetation species list was generated by the wetland biologist who delineated the wetlands within the proposed action. A summary of species observed during the delineation efforts is available in the project record.

3.16 WILDLIFE, AQUATIC AND TERRESTRIAL

The proposed action would occur within the ROW of CR 510, COLORADO STATE HIGHWAY 160 and COLORADO STATE HIGHWAY 160B. The majority of the pipeline would be buried within the road shoulder which is comprised of fill material contoured to create a storm-water conveyance ditch. There would be minimal disturbance to natural areas where native vegetation communities occur. Aquatic life is limited to

occur in wetland/riparian settings and the Dry creek drainage. Terrestrial wildlife may occur but could not rely on the proposed action area as habitat. A summary of the types of wildlife that may occur in the proposed action area is summarized as follows;

Ungulate species are found throughout the proposed action area and include Mule deer (*Odocoileus hemionus*) and elk (*Cervus canadensis*). Both are important game species and can use all of the vegetation community types within the project corridor. Both elk and deer require a variety of habitats to meet their life history requirements. As a result, migration routes range considerable distances. The project corridor bisects a migratory corridor for both species (CDOT 2006).

Raptors commonly occur throughout the proposed action area given the large amount of bare ground enabling their hunting activities. The riparian and pinyon-juniper woodland habitats provide nesting habitat and roosts. CDOT recorded raptor species known or likely to be present in the COLORADO STATE HIGHWAY 160 corridor (CDOT, 2006). These species include the Bald eagle (*Haliaeetus leucocephalus*), Golden eagle (*Aquila chryaetos*), Red-tailed hawk (*Buteo jamaicensis*), Ferruginous hawk (*Buteo regalis*), Swainson's hawk (*Buteo swainsoni*), Sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), American kestrel (*Falco sparverius*), American peregrine falcon (*Falco peregrinus anatum*), and the Great horned owl (*Bubo virginianus*).

There are upwards of 100 passerine (migratory songbirds) species that occur within the proposed action area during nesting, migration or winter seasons. Riparian habitats tend to be critical to migratory songbirds for one or more of their life stages. Based on reviewed literature summarized within CDOT, 2006; the COLORADO STATE HIGHWAY 160 corridor may provide nesting or wintering habitat for the following species; gray gnatcatcher (*Poliophtila caerulea*), scrub jay (*Aphelocoma coerulescens*), pinyon jay (*Gymnorhinus cyanocephalus*), sage thrasher (*Oreoscoptes montanus*), black-billed magpie (*Pica pica*), bushtit (*Psaltiriparus minimus*), and chipping sparrow (*Spizella passerina*).

Dry Creek is an intermittent stream and does not support a fishery due to the fluctuating flows affected by withdrawals for irrigation and return irrigation flows. It is likely that when the flows are present, opportunistic invertebrates and amphibians may occur.

Table 3. Alternative Comparison by Issue.			
Characteristic/Issue ⁽¹⁾	Issue - Subcategory	Proposed Alternative	No Action/Private Lands Crossing Alternative
Linear Distance (miles)	On Federal Lands	1.25	0
	On Private or County Lands	9.75	13.7
	TOTAL	11	13.7
Square footage of Impact ⁽²⁾	On Federal Lands	98,881	0
	On Private or County Lands	772,319	1,085,040
	TOTAL	871,200	1,085,040
Acreage of Impact	On Federal Lands	2.27	0
	On Private or County Lands	17.73	24.9
	TOTAL	20	24.9
Invasive, Non-native Species ⁽³⁾	Acreage impacted and vulnerable to invasion.	20	24.9
Vegetation ⁽⁴⁾	Agriculture (acres and % of total project)	6.32 (31.3%)	6.23 (25.0%)
	Pinyon-Juniper woodland	9.15 (45.4%)	12.11 (48.7%)
	Sagebrush shrubland	2.69 (13.3%)	4.0 (16.1%)
	Greasewood Flat and Desert Grassland	0.61 (3.0%)	0.32 (1.3%)

	Desert shrub steppe	0.44 (2.2%)	0.35 (1.4%)
	Shale badland	0.44 (2.2%)	0.33(1.3%)
	Gambel oak mixed shrubland	0.21 (1.0%)	0.40 (1.6%)
	Riparian woodland and shrubland	0.16 (0.8%)	0.49 (1.9%)
	Subalpine grassland	0.15 (0.7%)	0.37 (1.5%)
Wetlands/Riparian Zones ⁽⁵⁾	Total acreage impacted	0.81	0.81
Wildlife, Aquatic and Terrestrial	Acreage of Wildlife Habitat impacted ⁽⁶⁾	20	24.9
	Acreage of Passerine Bird Habitat impacted ⁽⁶⁾	20	24.9
	Acreage of Aquatic Habitat impacted ⁽⁷⁾	0.81	0.81

Footnotes:

- (1) Please note: the impacts quantified are temporary and isolated to the construction period. Once reclamation begins, these impacts will largely be mitigated.
- (2) Square footage was calculated assuming a potential project footprint width of 15 feet.
- (3) Since physically disturbed terrestrial settings are susceptible to noxious weed invasion, it was assumed that every total acre impacted by constructed could be vulnerable to weed occurrence. Quantitative measure of noxious weeds in the project corridors are limited and uncertain (as per correspondence with La Plata County GIS etc.)
- (4) Vegetation units are expressed in acres impacted and percent (acres) of total acres.
- (5) Wetlands were delineated and quantified for each Phase (1E, 1F, 1G and 1H). The total acreage presented is the sum total from these Phases. The No Action/Private lands alternative does not cross any additional 'waters of the US'.

- (6) Terrestrial wildlife species known to occur in the project area include ungulates (Elk and deer), various predators, small mammals and an abundant diversity of passerine birds. All vegetation types with the exception of 'developed' types are viable habitat. Habitat acreage was quantified assuming all vegetation types (refer to Figure 7) are viable habitat with the exception of developed ground.
- (7) Aquatic habitat was inventoried as part of the wetland delineation efforts. Most all wetlands were associated with bodies of surface water with some exception (i.e. the riparian fringe associated with the Pioneer ditch crossing in Phase 1F). Therefore it was conservatively assumed that all wetlands acreage was potential viable aquatic habitat.

CHAPTER 4 ENVIRONMENTAL IMPACTS

4.1 DIRECT AND INDIRECT IMPACTS - PROPOSED ACTION

The following describes the direct and indirect impacts attributable to the proposed action (proposed project or action). Direct and indirect impacts to the ‘no action/private lands alternative’ are provided in **Section 4.2**; while cumulative effects attributable to the proposed action in combination with reasonably foreseeable projects requiring Federal approval, previously constructed phases (Phase 1A, 1B, 1C, 1D and 2A) are addressed in **Section 4.3** and cumulative effects attributable to the no action/private lands alternative in cumulative combination with Phases 1A, 1B, 1C, 1D and 2A are described in **Section 4.4**.

4.1.1 ACCESS

The proposed action impacts access to lands affected by the project since it would traverse federal lands managed by the BLM and BIA. Previous to this proposed action, access was addressed by each Phase and coordinated with La Plata County, City of Bayfield and CDOT. This project bisects BLM and BIA parcels which triggers federal regulatory authority defined by NEPA. As such, access has encumbered the completion of this proposed action thereby affecting the timeline and cost of the effort.

4.1.2 AIR QUALITY

The proposed action may affect air quality during construction. Once the pipeline is installed and buried, there will be no impact to air quality as a result of operation and maintenance.

Construction may yield air particulates during trenching/excavation and construction equipment emissions. These releases are temporary and unlikely to yield substantial impacts to air quality. Furthermore, LAPLAWD construction standards (LAPLAWD 2012a and 2012b) dictate that the construction contractors must exercise caution to control dust and air emissions. Given these temporary and controlled conditions, it is unlikely that the proposed action would substantially affect air quality.

4.1.3 CULTURAL RESOURCES

Summaries of the ERO Resources Corp. methods and findings for the “*Class I File and Literature Review and Class III Cultural Resource Survey La Plata Archuleta Water District Phases 1E-1H La Plata County, Colorado. August 2014 (ERO Resources Corp., 2014)*” written by Kathleen Croll/Senior Archaeologist are provided herein. A copy of the entire report is provided within the project record.

As per ERO findings,

- Approximately 11.1 miles of pipeline are included in these phases of the project. Total acreage is 73.27.
- Approximately 9.9 miles of the project area had been surveyed previously; the remaining 2.2 miles were surveyed at the Class III level.

- The survey area included a 25-foot buffer on either side of the centerline.
- The project resulted in documentation of two new segments of historical ditches, and re-visitation of nine previously recorded sites: four segments of historical ditches, one segment of a historical road, two prehistoric lithic scatters, and two prehistoric open camps. Two sites are recommended supporting segments of field or officially eligible ditches and one site is recommended needs data. The remaining eight sites are either non-supporting of the resource's eligibility or determined not eligible.
- Upon avoidance of all supporting or potentially eligible sites, a determination of 'no adverse effect to historic properties affected' is recommended for the project, pursuant to 35 CFR 800.4 of the NHPA.

4.1.4 GEOLOGICAL RESOURCES

The proposed action involves excavation of a trench to accommodate the buried pipeline. As a result, the underlying geological resources (minerals and paleontology) can be affected by excavation and exposure.

The proposed action may affect material excavated to a depth of 6 feet. There are no substantial minerals or paleontological resources in the area. The 'soils' are predominantly comprised of fill material used to build the county road base. While construction may cause a direct impact with the disturbance of underlying materials, the construction specifications call for the majority of the materials to be returned in place and contoured to baseline conditions. In summary, the proposed action would not have a direct impact during construction which would be eliminated by the time of post-construction when the site is returned to baseline condition.

4.1.5 HEALTH AND SAFETY

Human health and safety may be affected during the construction of the proposed action. Construction equipment and activity may interrupt traffic corridors and present a hazard to drivers. Furthermore, the actual construction activity is of potential concern to the health and safety of the workers.

Both of these conditions (hazards to traffic and workers) are addressed within LAPLAWD contract requirements which follow local, state and federal standards for health and safety (LAPLAWD 2012a and 2012b). Given that the construction activity is temporary, and that measures will be in place to protect health and safety; it is unlikely that the proposed action would affect health and safety.

4.1.6 INVASIVE, NON-NATIVE SPECIES

The proposed action would physically disturb the road-side setting of CR 510, COLORADO STATE HIGHWAY 160 and COLORADO STATE HIGHWAY 160B. The project involves excavation of road fill/soils and underlying geological materials. Disturbance of soils/fill would provide opportunity for invasive species to continue to occupy the area.

This setting is already disturbed from contouring and filling to build the road prism. Invasive and/or non-native species are present due to opportunistic colonization and reclamation reseeding. Construction specification/contract requirements define that the contractor would reseed and monitor the construction ground for invasive/non-native species. Impacted areas would be reseeded using prescribed seed mixes by the County

and/or by the BLM and BIA where appropriate. Given these requirements combined with the ongoing LAPLAWD oversight of each constructed phase, it is unlikely invasive/non-native species populations would continue to increase within the proposed project area.

In summary, there are already invasive/non-native species occupying the proposed action footprint. It is possible that species can continue to occupy the setting or be further introduced due to construction disturbance. However, LAPLAWD stipulates that all constructed phases be reclaimed/re-contoured to baseline conditions and monitored to address invasive/non-native species colonization. Therefore it was determined that impacts to these species would not be substantial.

4.1.7 NATIVE AMERICAN RELIGIOUS CONCERNS

No concerns or issues were identified. Therefore, no Native American Religious Concerns would be affected.

4.1.8 NOISE

Noise can be caused by the construction phase of the proposed action. These activities however will be short term and concurrent with daily traffic activity.

Noise abatement is a standard that is set forth by LAPLAWD to the construction contractors. LAPLAWD has adopted local, state and federal standards for the control of noise (LAPLAWD 2012a, and 2012b). Given the temporary status of the construction phase, and the controlling measures set forth by LAPLAWD during construction; it is unlikely that the proposed action will create substantial noise.

4.1.9 SOILS

The majority of the soils within the proposed action footprint is comprised of fill material used to construct the road prism. Construction specifications dictate that trenching would involve the retention of any true soils, and replacement of all excavated materials in a manner to return the setting to baseline conditions and contour. Soils are set aside immediately adjacent to the excavated trench. Once the pipeline is placed, surveyed and tested, the pipe is covered with the adjacent excavated materials. This approach would ensure that excavated materials are largely returned to their original excavated area.

In summary, the proposed action area does not contain a significant amount of native soils due to its physically disturbed setting. Construction may cause a direct impact with soil material removal, however construction methods insure that the materials are replaced roughly back to their original location. Impacts to native soils are expected to be minimal.

4.1.10 THREATENED, ENDANGERED OR SENSITIVE SPECIES AND CRITICAL HABITATS

Natural settings that support threatened, endangered or sensitive species are largely absent from the proposed action area. The proposed action itself occurs in a physically disturbed setting immediately adjacent to a county road or US Highway. The project footprint does not provide any resource value to aquatic or terrestrial life.

Therefore the only possible impact to species of interest would be as a result from construction disturbance affecting adjacent areas that provide a natural setting of potential value to these species.

Table 4 summarizes the federal and BIA/SUIT species of concern (and their habitats) that may occur in the general area (i.e. La Plata County) and assessed project impacts. **Appendix D** provides a summary of the USFWS, BIA/SUIT and BLM species lists as well as concise descriptions of each species life history requirements. Results of site surveys yielded no direct observations of any of the listed species within or adjacent to the proposed action setting. Furthermore, site surveys indicate that habitats within and adjacent to the project do not provide substantial resources for any species of interest.

As per the conclusions provided by **Table 4** it was determined that the project would have no effect on species listed under the Endangered Species Act (as amended) largely due to the lack of available habitat that would support the occurrence of the species of interest. In summary, the proposed action would not impact any BLM or BIA sensitive species. A wildlife clearance report is available in the project record.

Table 4. Summary of Project Impacts to Federally Listed Threatened, Endangered, and Candidate Species Potentially found in La Plata County.

Name	Status*	Habitat	Project Effects
Black-footed ferret (<i>Mustela nigripes</i>)	E	Open grasslands with prairie dog colonies year-found (at least >80 acres in size).	No Effect – habitat does not occur within or adjacent to the project.
New Mexico meadow jumping mouse (<i>Zapus hudsonius leuteus</i>) [#] (BIA/SUIT)	E	Riparian areas dominated by shrubby vegetation.	No Effect – habitat does not occur within or adjacent to the project.
Canada lynx (<i>Lynx canadensis</i>) (BIA/SUIT)	T	Large tracts of high elevation (>8,000 ft) mixed coniferous forest.	No Effect – habitat does not occur within or adjacent to the project.
North American wolverine (<i>Gulo gulo Luscus</i>)	C	Large, remote tracts of boreal forest and alpine tundra.	No Effect – habitat does not occur within or adjacent to the project.
Southwestern willow flycatcher (<i>Empidonax trailii extimus</i>) (BIA/SUIT)	E	Dense, shrubby riparian vegetation, usually in close proximity to surface water or saturated soil.	No Effect – habitat does not occur within or adjacent to the project.
Mexican spotted owl (<i>Strix occidentalis</i>) [#] (BIA/SUIT)	T	Mature to old growth mixed conifer stands on steep, north facing slopes with high snag and downed wood densities and high canopy closure.	No Effect – habitat does not occur within or adjacent to the project.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>) [#] (BIA/SUIT)	T	Cottonwood forest with dense understory vegetation. Minimum habitat patch size 2 hectare (ha).	No Effect – habitat does not occur within or adjacent to the project.
Bonytail chub (<i>Gila elegans</i>)	E	Flowing pools and backwaters of the Upper Colorado River Basin.	No Effect – habitat does not occur within or adjacent to the project.
Colorado pikeminnow (<i>Ptychocheilus lucius</i>) (BIA/SUIT)	E	Large rivers with a strong current, deep pools, eddies, and quiet backwaters.	No Effect – habitat does not occur within or adjacent to the project.
Humpback chub (<i>Gila cypha</i>)	E	Flowing pools and swift, turbid rocky runs of the Upper Colorado River Basin.	No Effect – habitat does not occur within or adjacent to the project.
Razorback sucker (<i>Xyrauchen texanus</i>) (BIA/SUIT)	E	Rivers with strong, steady currents over sandy bottoms.	No Effect – habitat does not occur within or adjacent to the project.
Rio Grande cutthroat trout (<i>Oncorhynchus clarki virginalis</i>) [#]	C	Gravel-bottomed creeks, lakes and small rivers primarily in the upper Rio Grande River watershed.	No Effect – Unknown in La Plata County.
Knowlton's cactus (<i>Pediocactus knowltonii</i>) [#] (BIA/SUIT)	E	Rocky alluvial deposits in dry pinyon-juniper woodlands below 6,650 ft.	No Effect – habitat does not occur within or adjacent to the project.
Schmoll's milk-vetch (<i>Astragalus schmolliae</i>)	C	Thin, wind-deposited, sandy/gravelly soil on mesas.	No Effect – habitat does not occur within or adjacent to the project.
Pagosa skyrocket (<i>Ipomopsis polyantha</i>) (BIA/SUIT)	E	Shale outcrops around the Town of Pagosa Springs.	No Effect – Unknown in La Plata County
Uncompahgre Fritillary butterfly (<i>Boloria acrocneuma</i>)	E	large patches of snow willow above 3,780 meters (12,400 feet).	No Effect – habitat does not occur within or adjacent to the project.

* T = Federal Threatened Species, E = Federal Endangered Species, C= Federal Candidate Species. # = Listed within the “BLM Colorado State Director’s Sensitive Species List” (BIA/SUIT) = Listed within the BIA/SUIT Species List (2014)

Sources: USFWS 2011a and USFWS Western Colorado Ecological Services Field Office, 2011b.

BIA/SUIT = Listed within the BIA/SUIT Species List (2014).

4.1.11 VEGETATION

The proposed action would physically disturb the road-side setting of CR 510 and COLORADO STATE HIGHWAY 160. Any existing vegetation would be affected by construction, and potentially affected post-construction due to reseeding efforts.

In summary, given the construction approach and monitoring efforts; the vegetation assemblage would be directly affected but returned to an acceptable reclamation assemblage. As a result the proposed action would not have a substantial impact to vegetation.

4.1.12 WASTES, HAZARDOUS AND SOLID

In inventory of potential hazardous waste sources was conducted along the proposed action area. There were no significant sources located using available records (US EPA, CDPHE and others).

Hazardous wastes may be spilled during construction from construction equipment. However, LAPLAWD has adopted local, state and federal standards which hold the construction contractor responsible for the control and abatement of any releases (LAPLAWD 2012a and 2012b). Given these control measures, and the lack of any existing hazardous waste sources it was determined that the proposed action is unlikely to yield hazardous wastes.

4.1.13 WATER QUALITY – SURFACE AND GROUNDWATER

The proposed action involves trenching which may expose groundwater and cause discharge releases in order to dewater the construction trench. If precipitation events occur, the exposed, disturbed ground could yield affected storm-water.

There are no flowing surface water resources within the project area. There are storm-water channels created to route water from the existing road prism. On occasion, irrigation ditches are encountered – however as per contract specifications – ditches (and any flowing surface water resource) are bored under and entirely avoided. Therefore, there are no surface water resources potentially affected by the proposed action.

Groundwater is anticipated to occur at depths greater than trench excavation however seasonal conditions may elevate levels. The only surface water potentially impacted by the project would be storm-water that comes in contact with the construction area. Storm-water may then pick up exposed soils and yield turbid water to down-gradient areas. Groundwater, if it occurs would have to be dewatered in order for construction to be accomplished. Both conditions will be permitted by the contractor under the CDPHE Discharge permit system. As such, controls would be put into place to control discharge and permit releases.

In summary, there are no surface water resources within the project area. Groundwater is anticipated to occur at depths greater than trench excavation however in the instance dewatering occurs during construction, the contractor is required to permit the discharge. The only surface water potentially impacted by the project would be storm-water that comes in contact with the construction area. This discharge pathway will also be permitted by the contractor and kept in control using best management practices as required by the permitting

authority (CDPHE). In summary, given these permit controls that would be in place, it is not anticipated that substantial impacts would occur to either surface or groundwater quality.

4.1.14 WETLANDS/RIPARIAN ZONES

There are wetlands and riparian zones within the proposed action. The impacts to the wetlands within the proposed action will be addressed as part of the US ACOE NW 12 PCN permit that is required for the project. LAPLAWD coordinates all construction activities with the US ACOE to adhere to NW permit conditions. All wetlands impacted will be monitored and restored within three years post-construction (refer to **Chapter 5** for further discussion).

In summary, the effects of construction will be completely restored as a permit requirement to BLM/BIA specifications and a LAPLAWD standard of performance.

4.1.15 WILDLIFE, AQUATIC AND TERRESTRIAL

Project construction can affect terrestrial wildlife activity within the surrounding areas. There are minimal terrestrial, aquatic, wetland or riparian habitats within the project area that provide resources of value to aquatic and terrestrial life. Project construction can also affect terrestrial wildlife activity as a result of noise and increased human activity.

The proposed action would not encompass natural setting features of value to terrestrial life. The pinon/juniper forest adjacent to the project area can provide habitat for wildlife species. The construction would occur in 2015 - 2017 and will likely be accomplished by Phase over the three year period. Only a small segment would be constructed at any given time. Therefore the amount of disturbance to wildlife would be short term only.

The proposed action would have a potential direct impact to wildlife activity adjacent to the county road and US highway. The effects would occur strictly during construction and be short term. There are no species of interest (threatened, endangered, sensitive species and their habitats) therefore common species such as mule deer and passerine birds are the most likely to be affected. In summary, given the short duration of the activity, and due to the fact that the construction is co-located with an existing physically affected travel corridor; the added impact from the proposed action is likely to be minimal.

4.2 DIRECT AND INDIRECT IMPACTS – NO ACTION/PRIVATE LANDS CROSSING

As previously described, the no action/private lands crossing alternative coincides with the proposed action in areas outside of the federal lands. The no action/private lands crossing alternative diverges from the proposed action by avoiding federal lands and traversing private lands around these parcels. As a result, an additional 6.2 linear pipeline miles of impacts (equivalent to ~11.27 acres assuming a width of 15') would occur. A preliminary evaluation of the potential impacts attributable to the 6.2 miles of private land crossings is provided below by resource category.

4.2.1 ACCESS

The private lands crossings require individual access agreements with each private land owner. Addressing these access requirements was beyond the scope of this assessment, therefore the impacts are only qualitatively described. As previously described, access across private lands is dependent upon negotiated terms between LAPLAWD and the private land owner. It was assumed that these negotiations would affect the overall timeline of the project and may affect cost and fees associated with the cost. It is unknown what effects to cost these agreements would have.

4.2.2 AIR QUALITY

The private lands crossing will yield higher impact to air quality as compared to the proposed action. This is due to the fact that the proposed action relies upon access on existing roads which are compacted and yield little dust. The private land crossing requires creation of access roads or use of unimproved roads which would yield dust. However, given LAPLAWDS construction standards (LAPLAWD 2012a, and 2012b) which require control of dust releases, the overall impact should be minimal.

4.2.3 CULTURAL RESOURCES

The impacts to cultural resources as a result of the 6.2 miles of private lands crossings are not specifically identified but likely to occur. The area is rich in ancient cultural resources. The construction would generally be concentrated in disturbed corridors and therefore previous impacts have most likely already occurred previously. It is likely that cultural resources are present. Therefore, if cultural resources are located, the pipeline route may be affected. Given LAPLAWD's approach to avoid impact to resources, there would be no direct impact. However, the need to address the data gap and conduct surveys to define the presence/absence of resources would affect the timeline and cost of this project.

4.2.4 GEOLOGICAL RESOURCES

The private lands crossings occur in open areas of private land. Aerial photographs indicate significant topographic change; but no 'outcroppings' of exposed geological resources. It is likely that the private lands crossings would affect geology minimally since the pipeline trench will ultimately be reclaimed to the original contours. Review of available mineral and paleontological records indicates that these crossings should not yield a substantial impact to these resources.

4.2.5 HEALTH AND SAFETY

Health and safety impacts are held in control by the over-arching construction requirements of LAPLAWD (LAPLAWD 2012a, and 2012b). Contractors are held to local, state and federal standards which protect health and safety related to traffic control and on-site work conditions. It is unlikely that the no action/private lands crossing alternative would have substantial impact to health and safety.

4.2.6 INVASIVE, NON-NATIVE SPECIES

Crossing private lands that are currently comprised of undisturbed vegetation communities would likely impact invasive, non-native species. Physical disturbance from the pipeline construction presents the opportunity for invasive species to encroach upon the disturbed footprint. Although the construction requirements define the need to restore the community to original composition; the occurrence of these invasive species is likely. Therefore, the control and monitoring of the species would be required which introduces an impact to the project timeline and cost.

4.2.7 NATIVE AMERICAN RELIGIOUS CONCERNS

No concerns or issues were identified. Therefore, no Native American Religious Concerns would be affected.

4.2.8 NOISE

Impacts to noise levels are held in control by construction requirements required by LAPLAWD (LAPLAWD, 2012a and 2012b). Contractors are held to local, state and federal standards to control noise. It is unlikely that the no action/private lands crossing alternative would yield any substantial impact to noise. This alternative would result in potentially great noise impacts to the private land owners through which the pipeline corridor would cross.

4.2.9 SOILS

Soils within the private lands crossing would be impacted during construction, but would be recovered once construction is complete and the area is reclaimed. There should be no net impact to soils if construction specifications of ‘protection of property’ are met.

4.2.10 THREATENED, ENDANGERED OR SENSITIVE SPECIES AND CRITICAL HABITATS

Initial review of sensitive species occurrence and life history requirements indicates that the private lands crossings should not affect these species directly or indirectly through the destruction of habitat. However, in-field surveys for each species of potential concern have not been accomplished. Therefore it is likely that surveys would be required to draw this conclusion more definitively. These surveys would affect the timeline and cost of the project. As a practice, LAPLAWD avoids critical resources, therefore if any species or its habitat were to be found, the route of the pipeline would be altered yielding no net impact to the species.

4.2.11 VEGETATION

Construction would impact the natural vegetation communities present within the private lands crossings. However, the ultimate goals defined by the construction specifications for LAPLAWD efforts are to restore these communities and control invasive species. If these goals are achievable, then there should be no net impact to vegetation. However, it is likely that some impact would occur and require monitoring and maintenance which would affect the project timeline and cost.

4.2.12 WASTES, HAZARDOUS AND SOLID

There are no sources of hazardous waste along the no action/private lands crossing alternative. Construction activities may yield a hazardous waste spill, however these accidents are held in check by construction standards required by LAPLAWD (LAPLAWD, 2012a and 2012b). These standards follow local, state and federal requirements for the control and abatement of any hazardous waste release. It is unlikely that the no action/private lands crossing alternative would yield any substantial amount of hazardous waste.

4.2.13 WATER QUALITY – SURFACE AND GROUNDWATER

Impacts to these resources are addressed by construction storm-water and dewatering permits. There should be no direct or indirect impact to these resources as a result of the no action/private lands crossing alternative.

4.2.14 WETLANDS/RIPARIAN ZONES

There are wetlands and riparian zones within this alternative. The impacts to the wetlands will be addressed as part of the US ACOE NW 12 PCN permit that is required for the project. LAPLAWD coordinates all construction activities with the US ACOE to adhere to NW permit conditions. All wetlands impacted will be monitored and restored within three years post-construction (refer to **Chapter 5** for further discussion).

In summary, the effects of construction will be completely restored as a permit requirement to BLM/BIA specifications and a LAPLAWD standard of performance.

There should be no direct or indirect impact to these resources attributable to the no action/private lands crossing alternative.

4.2.15 WILDLIFE, AQUATIC AND TERRESTRIAL

As per review of recent aerial photographs, the private lands crossings would affect open ground; therefore it is likely that the construction would disturb wildlife. Construction disturbance would be short term but may affect small mammal habitat detrimentally. Unlike the proposed action which generally coincides with disturbed ground physically affected from previous projects; the private lands crossing would traverse open ground with minimal previous effects. As a result, it is likely the construction would affect wildlife deterring their activity in the area.

4.3 CUMULATIVE IMPACTS – PROPOSED ACTION

“Cumulative effects” are those effects resulting from the incremental effect of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” 40 CFR 1508.7. The ‘cumulative effects study area’ associated with this proposed action includes all reasonable, foreseeable future actions as well as any linked past and present actions. Since the proposed action is comprised of a ‘linear utility corridor’, the potential cumulative impact area was also defined as a linear footprint with a conservative buffer 1,000 ft on both sides of the pipeline (refer

to **Figures 5 and 6 and 8**). The following subsections describe the foreseeable future projects (subsection 4.4.1) that either co-exist or are linked with the proposed action, as well as the applicable historic (subsection 4.4.2) (already constructed) projects that either coexist or are linked to the proposed project.

Foreseeable Future Projects

The purpose of this subsection is to describe the foreseeable future projects that co-exist or are linked to the proposed action in order to be sure to adequately describe the potential cumulative impacts attributable to all these projects in combination (addressed in subsections 4.4.1 etc. below).

In order to identify ‘foreseeable future’ projects; the land-owners/ROW owners including La Plata County, CDOT, BLM and others were contacted. La Plata County has not received any construction work permits or requests for corridor improvements within the cumulative project footprint area. There are ‘existing’ utilities within the cumulative project footprint corridor that require operation and maintenance work; however these features already exist and are discussed further in the ‘applicable historic projects’. The majority of the proposed action occurs along the COLORADO STATE HIGHWAY 160 ROW corridor which is held by CDOT. CDOT identified the following potential future projects that may occur in the next 5 – 10 years:

- CDOT proposed highway improvements on COLORADO STATE HIGHWAY 160 from west of the COLORADO STATE HIGHWAY 160/US Hwy 550 intersection in Durango to east of Bayfield in order to improve the conditions for the traveling public along this corridor. The entire project was scoped and evaluated within the ‘COLORADO STATE HIGHWAY 160 Final EIS, May 2006 document (<https://www.codot.gov/projects/us160eis/final-eis.html>). The project along COLORADO STATE HIGHWAY 160 would add two lanes to the highway from Grandview east to Bayfield. Beyond Mile Post 104.2 (past Bayfield) the roadway provides sufficient capacity and would not be widened past this point. In addition, in Gem Village, COLORADO STATE HIGHWAY 160 will be realigned to the south. The proposed project includes reconstruction of the COLORADO STATE HIGHWAY 160 intersections with CR 233 (east), CR 232 (west). LAPLAWD has acquired the geospatial plans for the proposed expansions and has plotted the pipeline place to occur outside of the expansion footprint, but will within the
- CDOT construction of wildlife underpass features including an underpass at Dry Creek and potentially Long Hollow crossing will begin in 2015. Comprehensive studies of wildlife migratory activity within the COLORADO STATE HIGHWAY 160 corridor have been documented since 2006 (“Linking Colorado’s Landscapes, Phase II Report: Linkage Assessment US Highway 160, Durango to Pagosa Springs: prepared by Southern Rockies Ecosystem Project for CDOT [April 2006]”) <http://rockymountainwild.org/site/wp-content/uploads/US-160-Durango-Pagosa-Springs.pdf>. Recent coordination between LAPLAWD and CDOT yielded the need to allow CDOT to begin the Dry Creek wildlife crossing construction PRIOR to any LAPLAWD pipeline construction. LAPLAWD is also providing construction plans to CDOT for review.
- CDOT is planning to develop a wetland mitigation bank area to the East of Dry Creek (on the North side of COLORADO STATE HIGHWAY 160). The existing hydrology and soils would support the propagation of wetland species and assist CDOT with mitigation banking needs. LAPLAWD plans on

coordinating any project activities through this reach in order to avoid any impacts to this future resource.

- CDOT construction of a Park-n-Ride facility at the southeast corner of CR 225A and COLORADO STATE HIGHWAY 160 will be constructed. This project is being coordinated with LAPLAWD to combine the park-n-ride with a water filling station. The construction plans of the water filling facility will be reviewed by CDOT and folded into the eventual construction plans.

It should be noted that LAPLAWD is actively planning the proposed pipeline project with CDOT in order to be sure the pipeline is cohesive with CDOT's construction plans etc. For instance, recent coordination with CDOT has yielded the need for CDOT to proceed with the wildlife underpass construction along Dry Creek PRIOR to any pipeline construction since the construction footprint is significant and can potentially affect the pipeline (discussed during a combined meeting between LAPLAWD and CDOT on 1/27/2015). As a result of this ongoing coordination, there should be no cumulative impact of concern attributable to the combination of CDOT and LAPLAWD proposed pipeline projects.

Past Actions

Applicable historic projects fall into three categories: 1) existing utility corridors including electricity, phone lines, and gas lines, 2) historic natural gas exploration wells, and 3) pre-existing LAPLAWD pipeline phases that are linked to the proposed alternative. Each of these three types of historic projects are described below.

The cumulative project footprint encompasses pre-existing utility corridors (including CDOT corridors). GIS queries identified the presence of La Plata Electric lines, Qwest (Century link) phone lines, a segment of the Bayfield sewer line and gas lines. CDOT has installed a 'wildlife detection' corridor system that includes transformer stations routing electricity from overhead lines. A summary of these utility corridor features is as follows:

- La Plata Electric Association (LPEA) has electric lines 'overhead' along the COLORADO STATE HIGHWAY 160 corridor. Several transformer stations route electricity to the CDOT wildlife detection corridor.
- Century link has buried a phone line along both sides of the COLORADO STATE HIGHWAY 160 corridor within the CDOT ROW.
- The Bayfield sewer line extends approximately 2/10's of a mile into COLORADO STATE HIGHWAY 160 off of COLORADO STATE HIGHWAY 160B (Phase 1H).
- CDOT has installed a wildlife detection corridor that detects specific types of movement within the CDOT ROW beginning at mile post 94.2 and ends at mile post 96.3.

These utility corridor features are located PRIOR to the planning of the proposed pipeline project in order to eliminate any conflicts between placements. The pre-existing utility and pipeline corridors have been installed and are reclaimed. Their continued operations are maintained. The proposed alternative will not impair or

affect these corridors and will achieve similar reclamation goals. As a result there should be no cumulative impacts attributable to the combination of historic projects and the proposed alternative.

Figure 8 depicts the gas wells within proximity to the cumulative project footprint. Most are closed and reclaimed. The remaining maintain access from the COLORADO STATE HIGHWAY 160 ROW corridor for operations and maintenance. The existing gas lines within the cumulative project footprint are maintained by British Petroleum and Williams Inc.. There are two ‘perpendicular’ crossings of BP lines in Phase 1F and potentially two crossings in Phase 1G (one with BP, the other with Williams). These crossings will be coordinated with BP and Williams to assure no conflicts.

As previously described, the proposed action would be comprised of ~11 miles of pipeline that traverses county road and highway ROW corridors that is a component of a larger ‘Phase 1 Loop’ within the LAPLAWD District which is comprised of four ‘existing’ phases (Phase 1A, 1B, 1C, 1D and 2A). Under the proposed action, there is the potential for cumulative impacts associated with the additional construction of Phase 2A, and the historic construction from previous Phases. However, it should be noted;

1. Phase 2A (and the previously constructed Phases of 1A, 1B, 1C and 1D) does not cross Federal lands and is entirely confined to La Plata County road ROW corridors,
2. Phase 2A is **not connected** to the proposed action. It is only connected to previously constructed Phases of the District.
3. Phase 2A (and the previously constructed Phases) is **not dependent** upon the completion of the proposed action. Water service will be linked to this pipeline regardless of the proposed action. For instance, there is water service through Phases 1A, 1B, 1C and 1D ongoing at this time.
4. Each Phase of the LAPLAWD District pipeline efforts are ‘independent’ and can be assessed as independent project (refer to item 3 which describes the ongoing water service in absence of the proposed action).

Results from the impact assessment (**Section 3**) eliminated several resources from consideration since the resources were absent (threatened, endangered, or sensitive species and their habitats), or avoided (cultural/historic resources), or held to regulatory standards due to overarching permit requirements associated with the construction activities (water quality – surface and groundwater, wetlands and riparian zones [discussed further below]), or temporary and inconsequential due to duration of impact which is isolated during construction (air quality, health and safety, noise, wastes – hazardous and solid). This cumulative assessment folds in the potential impacts associated with the foreseeable future projects as identified within the CDOT ROW, as well as the pre-existing utility and gasline corridors and the previously constructed Phases (Phase 1A, 1B, 1C, 1D and 2A). The impacts these previously constructed phases have to threatened, endangered or sensitive species (and their habitats) and cultural/historic resources are addressed as part of the US ACOE PCN permit process (and have been documented within the permit application). Results from these assessments indicate no impact to any of these resources evaluated. Copies of these permits and agency correspondence can be made available to BLM and BIA where needed. Since these additional phases were found to yield ‘no impact’; there would be no ‘cumulative’ impact attributed to the proposed action.

The remaining resources of interest for the cumulative impact assessment include;

1. Access
2. Air Quality
3. Geological Resources
4. Health and Safety
5. Invasive, Non-Native Species
6. Noise
7. Soils
8. Vegetation,
9. Wastes, Hazardous and Solid
10. Wildlife, Aquatic and Terrestrial (including migratory birds)

4.3.1 ACCESS

There would be no cumulative impacts to access attributable to the additional evaluated foreseeable and applicable historic projects that coincide with the cumulative project footprint area since access has been previously acquired and allowed by La Plata County/City of Bayfield/CDOT prior to the construction of these phases. There is no cumulative change to access due to the inclusion of potential foreseeable and applicable historic projects linked to the cumulative project footprint.

4.3.2 AIR QUALITY

Air quality concerns are created during the construction phase of the pipeline installation. Since the historic projects within the cumulative project footprint are complete; there would be no ongoing air quality concern related to these projects. Similarly, the foreseeable future projects will require acquisition of permits for air quality concerns where appropriate. Given the temporary nature of the potential air quality concerns, there should be no cumulative impact to air quality.

4.3.3 GEOLOGICAL RESOURCES

Subsurface materials would be affected short term due to construction and excavation. However, as previously described; contract specifications require that these materials be returned in place and contoured to achieve baseline conditions. The previously constructed phases and applicable historic projects have been reclaimed and are being monitored to achieve permitted restoration goals as defined by the issued US ACOE PCN and EPA CWA 401 certificates. Similarly, the foreseeable future construction projects will be permitted by the US ACOE (and the US EPA/CDPHE where appropriate) to adhere to these same restoration. Given these restoration goals it was determined that the net cumulative impact to geological resources would be insignificant.

4.3.4 HEALTH AND SAFETY

Health and safety concerns arise during the construction phase of pipeline installation. Since the applicable historic projects and Phases 1A, 1B, 1C, and 1D are complete; there are no cumulative health and safety concerns attributable to these phases. Similarly, the foreseeable future projects will be managed by CDOT and

should not contribute any health and safety concern. In summary there should be no cumulative concern related to health and safety for the proposed action.

4.3.5 INVASIVE, NON-NATIVE SPECIES

The proposed action, the cumulative project footprint area, the previously constructed phases and Phase 2A have very little natural vegetation assemblages. Invasive/non-native species are common. Contract requirements specify that disturbed ground be reseeded using County approved, and BLM approved (and BIA) seed mixes (where they apply) that assist with storm-water erosion. The proposed action would be reseeded and monitored to ensure colonization of invasive/non-native species is at a minimum. Since the historic projects have likely met or are maintaining reclamation goals, there are likely minimal cumulative impacts to invasive, non-native species. Similarly, any foreseeable future project will be held to similar reclamation standards, therefore as a result, the net cumulative impact attributable to these species is minimal.

4.3.6 NOISE

Noise is a concern during the construction phase of pipeline installation. As previously mentioned, since the applicable historic projects inclusive of Phases 1A, 1B, 1C and 1D are already constructed; noise is no longer an issue. Phase 2A is near completion and would also be of minimal concern. Foreseeable future projects will likely be monitored by CDOT in order to maintain their noise/level standards. Therefore, in summary, noise is not an issue of cumulative concern for the proposed action.

4.3.7 SOILS

Very little native soil material occurs within the proposed action, the cumulative project footprint area and within the applicable historic project settings which include previously constructed Phases and Phase 2A footprints. Similarly, the foreseeable future projects within the cumulative project footprint area will also be constructed in previously disturbed settings. These projects are predominantly aligned with ROW road shoulders. Contract specifications dictate that excavated soils materials be returned in place and contoured to reflect original conditions. The previously constructed historic projects have been reclaimed and restored to their original contours. For instance, the previously constructed LAPLAWD phases were inspected by LAPLAWD and the County which yielded acceptance of contract closure indicating that the reclaimed ground has met contract standards. Similarly, any future foreseeable construction project will be monitored by CDOT (and BLM or others where appropriate) and will be held to these same goals. As a result, the net cumulative impact to soils attributable to the applicable historic projects and potential future foreseeable projects would be minimal.

4.3.8 VEGETATION

The cumulative project footprint area is comprised largely of opportunistic vegetation species. Isolated wetlands associated with irrigation water occur sporadically. The potential foreseeable future construction detail specifications would outline how reseeded and restoration of wetlands are required as part of the construction effort and are defined by the over-arching regulatory requirements outlined within the issued permits by the US ACOE, EPA and SUIT. Similarly, any historic project that was held to permit standards would have achieved the same re-vegetation goals. The vegetation should eventually return to a population of

species dictated by the reseeding mix defined by the County and/or the BLM, or by the wetland restoration effort. As a result, the net cumulative impacts to vegetation would be considered insignificant.

4.3.9 WASTES, HAZARDOUS AND SOLID

Hazardous and solid wastes are only of potential concern during the construction phase of pipeline installation. Since the applicable historic projects would have addressed any historic wastes, the cumulative impacts would be minimal. Similarly, any foreseeable future construction would be held to CDOT (and BLM) standards for work performance which would effectively control any use or release of wastes. In summary, this issue should not be of concern for the cumulative impacts attributable to the proposed action.

4.3.10 WILDLIFE, AQUATIC AND TERRESTRIAL

Cumulative construction activity could disturb terrestrial wildlife due to noise and physical activity. However the construction of the proposed action would occur in ‘segments’ so only a small portion is disturbed at any one time. The previously constructed historic projects would contribute no impact to these resources since each project has reached (or is being monitored to) its restoration goal. Similarly, the potential foreseeable projects to be constructed by CDOT are separated by distance (and time) from the proposed action. The wildlife potentially affected (i.e. mule deer, passerine birds) are highly mobile and can respond to disturbance. It is likely these species show acclimation to disturbance given the existing physical setting (county road traffic, adjacent land uses of farming/agriculture). Therefore in summary, the cumulative impact to wildlife activity attributable to the proposed action combined with the previously constructed projects or potential foreseeable projects would be considered minimal.

4.4 CUMULATIVE IMPACTS – NO ACTION/PRIVATE LANDS ALTERNATIVE

Cumulatively impacted lands were previously defined in Section 4.4 and defined conservatively as a linear corridor surrounding the pipeline with a 1,000 foot buffer on either side. Already completed projects (inclusive of utility corridors, gas wells and lines and previously constructed LAPLAWD Phases of 1A, 1B, 1C and 1D) in combination with potential foreseeable future projects are addressed as part of the cumulative assessment (as per coordinated agreement with BLM and BIA NEPA representatives; February 27, 2014; and February 5, 2015)

This Section addresses the potential cumulative effects attributable to the no action/private lands crossing alternative. The no action/private lands crossing would have more substantial direct impacts to natural resources since construction occurs across natural settings associated with the private lands. However, it would not have more cumulative impacts as a result of the combined effects from applicable historic projects or potential foreseeable projects since there are no applicable historic or future foreseeable projects associated with the private land. Review of the private lands settings indicates there are no applicable historic projects or planned construction activities. There are no ‘added’ impacts as a result of any Federal-approved historic or future action that would occur on the private lands crossing. Only along those CR and US Hwy 160 and 160 segments which co-occur between the proposed action and the no action/private lands alternative would share similar cumulative historic and future foreseeable project impacts. The most significant cumulative footprint segment that lends applicable historic and potential foreseeable projects would be associated with the

COLORADO STATE HIGHWAY 160 corridor where the proposed future CDOT projects occur. The most likely elements to contribute ‘cumulative’ impacts to the no action/private lands alternative would be those impacts attributed to the ‘linked’ Phases of construction associated with LAPLAWD (Phases 1A, 1B, 1C, 1D and 2A).

4.4.1 ACCESS

The no action/private lands crossing alternative would directly impact access issues due to the need for access agreements across those lands. There would be no cumulative access issues since the previously constructed Phases, and Phase 2A lands all have the necessary access issues addressed.

4.4.2 AIR QUALITY

Air quality is of concern during the construction phase of pipeline installation. Since the no action/private lands crossing alternative will involve trenching across non-compacted soils; it is likely that the direct releases of dust are greater from this alternative as compared to the proposed action. However there should not be any substantial ‘cumulative’ impact since the cumulative phases (Phases 1A, 1B, 1C, 1D and 2A) are already constructed.

4.4.3 CULTURAL RESOURCES

As previously mentioned, the direct impacts to cultural resources attributable to the private lands crossing are likely more substantial than those related to the proposed action. This is due to the fact that the no action/private lands crossing alternative involves trenching across undisturbed (private) lands. The cumulative impacts to these resources (attributable to pre-constructed Phases of 1A, 1B, 1C, 1D and 2A) would not add a substantial concern since these previously constructed Phases were all found to avoid known cultural resources.

4.4.4 GEOLOGICAL RESOURCES

It was determined that the no action/private lands crossing alternative may likely have a more substantial direct impact to geological resources as compared to the proposed action, since undisturbed land would be affected. The cumulative impacts however should not be affected since the cumulative-linked phases (Phases 1A, 1B, 1C, 1D and 2A) are complete.

4.4.5 HEALTH AND SAFETY

Health and safety concerns arise during the construction portion of pipeline installation. Direct concerns associated with health and safety are likely more substantial for the no action/private lands crossing alternative vs. the proposed action since there is a greater amount of construction required (13.6 miles vs 11 miles). The indirect cumulative impacts linked to the cumulative Phases (1A, 1B, 1C, 1D and 2A) would not increase the health and safety concern since these Phases are complete.

4.4.6 INVASIVE, NON-NATIVE SPECIES

Invasive, non-native species are more of a direct concern for the no action/private lands crossing alternative as compared to the proposed action since more native ground is directly impacted by construction. The cumulative impacts attributable to the cumulative-linked phases would not increase the concern of invasive species since these Phases are complete.

4.4.7 NOISE

Noise is a concern that occurs during the construction portion of pipeline installation. The direct impacts to noise from the private lands crossing would be greater than those attributable to the proposed action since there is more construction involved. However the cumulative impacts would not be substantial since construction is complete for the cumulative-linked phases (Phases 1A, 1B, 1C, 1D and 2A).

4.4.8 SOILS

Direct impacts to soils attributable to the no action/private lands crossing alternative would be greater than those associated with the proposed action since more native soils are impacted. The cumulative impacts attributed to the previously-constructed Phases (the cumulative-linked Phases of 1A, 1B, 1C, 1D and 2A) however would not increase concerns substantially since disturbance to soils has been mitigated.

4.4.9 THREATENED, ENDANGERED OR SENSITIVE SPECIES AND CRITICAL HABITATS

Direct impacts to species and habitats of concern would be greater for the no action/private lands crossing alternative as compared to the proposed action since a greater amount of native ground is impacted. However the cumulative impacts attributed to the cumulative-linked Phases would not be substantial. These Phases (1A, 1B, 1C, 1D and 2A) are constructed and disturbance has been mitigated; therefore these Phases would not contribute any substantial impact to species and habitats of concern.

4.4.10 VEGETATION

Vegetation would be directly impacted by the no action/private lands crossing alternative due to the fact that this alternative involves trenching across native/undisturbed ground. The direct impacts attributable to this alternative would be greater than those attributable to the proposed action which trenches within existing disturbed ground. Cumulative impacts attributable to the previously constructed phases would not contribute substantial impacts since construction is complete and mitigation is ongoing.

4.4.11 WASTES, HAZARDOUS AND SOLID

Wastes are of concern during the construction portion of pipeline installation. Since the private lands crossing involves more pipeline construction distance (13.6 miles vs 11 miles) than the proposed action, the direct impacts associated with wastes would be potentially greater. However the cumulative impacts attributable to the cumulative-linked phases would not introduce any more substantial impact since these Phases (Phases 1A, 1B, 1C, 1D and 2A) are completed.

4.4.12 WATER QUALITY – SURFACE AND GROUNDWATER

Direct impacts to water quality would be greater for the private lands crossing as compared to the proposed action since a greater amount of work has to be completed. Indirect impacts attributable to cumulative-linked phases would not add a substantial amount since these cumulative-linked phases are already constructed (Phases 1A, 1B, 1C and 1D) or nearly so (Phase 2A).

4.4.13 WETLANDS/RIPARIAN ZONES

Impacts to wetlands and riparian zones would be permitted under the acquired US ACOE NW permit. It is likely that the no action/private lands crossing alternative would yield greater direct impacts to these resources since a larger amount of native/undisturbed ground would be impacted. However the cumulative indirect impacts associated with the cumulative-linked phases would not introduce a substantial amount of impact; since these Phases are all monitored/restored under existing US ACOE NW permits.

4.4.14 WILDLIFE, AQUATIC AND TERRESTRIAL

Wildlife would potentially be more directly impacted by the no action/private lands crossing alternative as compared to the proposed action due to the greater amount of native/undisturbed land impacted. However, the cumulative indirect impacts attributable to the cumulative-linked Phases would not add a substantial amount of concern since these Phases are completed. Once the construction footprint is reclaimed, any habitat of use to wildlife is restored.

CHAPTER 5

PERSONS, GROUPS, AND AGENCIES CONSULTED

Consultation and coordination is required by other laws and regulations, whether or not the proposed action is expected to have any environmental impacts. Several agencies were consulted during the planning of the proposed action to determine the scope of necessary permits and NEPA (summarized in **Table 5**) compliance as follows;

- The USFWS (Western Colorado Ecological Services Field Office, Grand Junction CO) was contacted to obtain an official “species-list for the LAPLAWD project” (**Appendix D**),
- Similarly, the CPW regional office (and State Office) were contacted to identify State-protected species of concern within the LAPLAWD Water District, and
- The CNHP was contacted to run database queries describing the occurrence of protected areas and species within the LAPLAWD Water District.
- The BLM, BIA and SUI were all contacted to coordinate ROW grant access requirements and the scope of the NEPA analysis.
- In addition, a Biological Assessment (BA) was completed for the SUI as part of the ROW process. This BA was reviewed and approved of by the SUI staff.
- CDOT was coordinated with in order to align the proposed action with their future designs for the Colorado State Highway 160 corridor. (**Figure 9** depicts an example alignment of the proposed pipeline in relation to CDOT COLORADO STATE HIGHWAY 160 features and proposed expansion efforts).
- US ACOE has been continually coordinated with in order to acquire the necessary CWA Section 404 Nationwide permit applicable to utility corridor construction activities.

The results from these USFWS, CPW and CNHP queries were used to formulate the list of Federal and State species of interest addressed within **Chapters 2 through 4** of this document. The results of the BIA, BLM and SUI require were used to identify the NEPA scope of analysis. The results of the CDOT coordination served to accomplish a proposed action design that would be cohesive with CDOT future expansion work along the same highway corridor.

The SUI was consulted to scope the ROW process and document requirements. A tentative checklist of resources to be addressed within the EA was reviewed by SUI representatives. A copy of the Cultural Resource inventory and project impacts was also provided for SUI review (ERO, 2013). A list of species of concern from the USFWS, CPW and CNHP was combined with species to be addressed on SUI lands and documented within a Biological Assessment (Grayling LLC, 2013) (the BA and SUI correspondence can be provided if needed). The BA was reviewed by SUI (Steve Whiteman) and approved (correspondence provided in **Appendix D**). In addition, SUI representatives from the Lands and Range Divisions provided an “On-Site Report” documenting “Site Specific Stipulations/Mitigations” for project work to be completed within SUI lands (a copy provided in **Appendix D**).

Since a major portion of the project footprint crosses La Plata County and CDOT ROW grounds; the overarching environmental regulatory compliance rests with the permitting agencies. The U.S. Army Corps of

Engineers (point of contact: Kara Hellige/Durango Field Office) was contacted prior to the planning of the proposed action to scope LAPLAWD permitting efforts. It was determined that the phases of the LAPLAWD construction adhere to the Nationwide 12 Utility Corridor Pre-Construction Notice permitting procedure. As such, it is the responsibility of LAPLAWD (Grayling LLC as a third party contractor) to address impacts to cultural resources, historic resources and biological resources as part of the PCN process. The US ACOE then passes the assessment results on to the Colorado State Historic Preservation Office, the USFWS etc., where needed for Agency review and clearance. As a result, the “persons, groups, and agencies consulted” is addressed as part of the US ACOE NW 12 PCN application which is ongoing concurrent with this EA.

Acquisition of a CDOT Utility Corridor permit is required to address the COLORADO STATE HIGHWAY 160 portion of the proposed action. The corridor permit requires an in-depth mapping of the pipeline alignment; along with survey of the project in relation to existing highway features; and a traffic control plan, environmental checklist etc.. These efforts are all being addressed concurrent with this EA.

Due to the location of the Phase 1E **component** of the proposed action which crosses a segment of SUIT territory, the US ACOE NW 12 permit requires concurrent US EPA/SUIT Clean Water Act 401 Certification. Therefore, in addition to the pursuit of the NW 12, the EPA/SUIT CWA 401 certificate is also pursued.

These permits and agency clearance documents can be provided to BLM and BIA/SUIT upon completion of these efforts.

As previously mentioned; Grayling LLC prepared the DRAFT document for initial BLM and BIA review. A summary list of preparers is provided within **Table 6**.

Table 5. List of Persons, Agencies and Organizations Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
U.S. Fish & Wildlife Service (USFWS)	The required US ACOE NW 12 PCN involves initial consultation with the USFWS to determine the presence/absence of Federal species/habitats of concern.	<i>The Service was initially contacted as part of the Water District scoping (see above text description). The Service will not likely be contacted as part of the US ACOE NW 12 permit process since it was determined that the proposed action will not affect any Federal species directly or indirectly as part of the project construction or maintenance.</i>
Colorado Department of Transportation (CDOT)	Projects within the COLORADO STATE HIGHWAY 160 ROW require a Utility Corridor permit.	<i>LAPLAWD is working concurrently with CDOT to align the proposed action with CDOT's future expansion efforts for this highway corridor. Pursuit of the necessary Utility Corridor Permit is concurrent with this EA.</i>
Colorado Parks and Wildlife (CPW)	The required US ACOE NW 12 PCN involves initial consultation with the CPW to determine the presence/absence of State species/habitats of concern.	<i>The Parks and Wildlife was initially contacted as part of the Water District scoping (see above text description). The Division will not likely be contacted as part of the US ACOE NW 12 permit process since it was determined that the proposed action will not affect any State species directly or indirectly as part of the project construction or maintenance.</i>
Colorado Natural Heritage Program (CNHP)	The CNHP possess the most complete inventory of Federal and State protected species and their habitats. CNHP is consulted to determine the presence/absence of these resources within the LAPLAWD District.	<i>Not applicable. The CNHP is not a regulatory authority and represents a State resource that provides comprehensive and current species and habitat descriptions only.</i>
Colorado State Historic Preservation Office (CSHPO)	National Historic Preservation Act Compliance.	No Historic Properties Affected.
La Plata County (Road and Bridge; Engineering)	The proposed action occurs within the CR 510 ROW corridor which requires coordination with the County and a work access agreement.	<i>Proposed plans for the project have been submitted to La Plata County; and the contractor is required to obtain a work access agreement prior to construction.</i>
U.S. Army Corps of Engineers, Sacramento District (Durango Field Office)	The project would require a permit from the Corps under authority of Section 404 of the Clean Water Act.	<i>Pending. The US ACOE will be contacted to review the proposed action for the necessary NW 12 PCN permit.</i>
U.S. Environmental Protection Agency,	The project would require a certification from the EPA under authority of Section 401 of the Clean Water Act.	<i>Pending. The Regional office will be contacted to review the proposed action for the necessary CWA 401 Certification.</i>

Region 8		
Southern Ute Indian Tribe (SUIT) – Lands Division and Water Quality and the Bureau of Indian Affairs (BIA)	The project would require both a ROW grant and a certification from the BIA/SUIT under authority of ROW grant easement and Section 401 of the Clean Water Act (SUIT only).	<i>Pending. The SUIT office has been contacted and is currently reviewing the ROW Grant application. The SUIT office will be contacted to review the proposed action for the necessary CWA 401 Certification. The BIA has reviewed this EA and will be reviewing a ROW grant application.</i>

Table 6. List of Preparers

Name	Title	Responsible for the Following Section(s) of this Document
Karmen King	Aquatic Toxicologist	Main document, resources addressed include aquatic and terrestrial ecology (and species of interest), surface water and groundwater resources.
Mike Thompson	Geologist	Resources addressed include soils, geology and paleontology.
Brett Sherman	Engineer	Proposed action design and description.
Pat Drew	Wetland Biologist	Wetland delineation.
Kathy Croll	Senior Archaeologist	Resources addressed include cultural resources, archaeology.
Ed Tolen	LAPLAWD General Manager	Technical Coordination and Quality Control

CHAPTER 6

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APPENDICES

APPENDIX A

**USDOI BLM RIGHT-OF-WAY APPLICATION: SERIAL NO. COC-076312
DECISION – PROCESSING CATEGORY DETERMINED**

**USDOI BIA RIGHT-OF-WAY APPLICATION:
DECISION – PROCESSING CATEGORY DETERMINED**

APPENDIX B

**CLASS I FILE AND LITERATURE REVIEW AND CLASS III CULTURAL RESOURCE SURVEY,
LAPLATA ARCHULETA WATER DISTRICT PHASES 1E – 1H.**

APPENDIX C

INTERDISCIPLINARY TEAM CHECKLIST

LAPLAWD CR 510 BLM ROW DRAFT - Scoping Resource Checklist.		
Determination	Resources	Rationale for Determination
NI	Access	Temporary effect to CR 510 traffic during construction, then eliminated.
NI	Air Quality	Temporary dust emissions during construction, then eliminated.
NP	Areas of Critical Environmental Concern	Not present.
NI	Cultural Resources	Project footprint has been previously surveyed. No resources are located within the BLM segment addressed with the ROW grant. Regardless, the entire Phase 1E cultural resource assessment was included for completeness. No cultural resources listed or eligible for listing on the NRHP would be affected.
NP	Environmental Justice	Not applicable.
NP	Farm Lands (Prime or Unique)	Not present.
NP	Forest Lands and Management	Project occurs entirely within a CR ROW, land use management of adjacent BLM managed federal lands will not be affected.
NI	Fire	Potential for fire during construction then eliminated.
NI	Floodplains	Project impacts are isolated to road-side settings and will not affect the topographic contours of the area overall. Post construction, the site settings will be returned to baseline settings.
PI	Geology, Minerals and Paleontology	Road-shoulder primarily comprised of fill materials but some native geological resources can be affected from pipeline placement.
NI	Health and Safety	Construction activities can cause temporary traffic control issues. etc.
PI	Invasive, Non-Native Species	Invasive species can occupy disturbed ground post-construction if reseeding and monitoring not accomplished correctly.
NP	Native American Religious Concerns	Not present. Adjacent SUIT lands to be addressed as part of SUIT ROW permit efforts.
NI	Noise	Temporary impacts to occur during construction – then eliminated.
NI	Rangeland Management	Adjacent lands could be managed for rangeland resources. However the project occurs entirely within an existing CR ROW therefore adjacent lands management efforts will not be affected.
NP	Recreation	Not present.
NP	Socioeconomic Values	Not applicable.
PI	Soils	‘Introduced’ road fill materials (not true soils) to be affected during construction.
NP/EA	Threatened, Endangered or Sensitive Species and Critical Habitats	Initial, non-invasive, literature based surveys using ecosystem setting characteristics indicate there is no habitat supporting sensitive species within the project area. Regardless, a complete assessment was included as part of the EA.
PI	Vegetation	Invasive vegetation (no native vegetation species will be disturbed) to be affected during construction. Post-construction conditions will be affected by reseeding efforts.

NI	Visual Resources	Temporary during construction – then eliminated.
NP	Wastes, Hazardous or Solid	None present or used as part of construction efforts.
PI	Water Quality – Surface and Groundwater	Permit authorities preside over potentially affected water quality (storm water and construction water discharge).
NP/EA	Wetlands/Riparian Zones	Inventoried within the BLM ROW and found to be absent. However, inventoried, restored and monitored as part of over-arching US ACOE Section 404, and US EPA Section 401 certifications (coordinated with SUIT) for the Phase 1E project as a whole.
PI	Wildlife, Aquatic and Terrestrial	Temporary disturbance to terrestrial life during construction, then eliminated.
NP	Wild and Scenic Rivers	Not present
NP	Wilderness	Not present
Footnotes:		
NP	Not Present in the area impacted by the proposed or alternative actions	
NP/EA	Not Present but resource of substantial interest and should be described in EA	
NI	Present, but not affected to a degree that detailed analysis is required	
PI	Present, with potential for relevant impact that need to be analyzed in detail in the EA	

APPENDIX D

AGENCY CORRESPONDENCE – THREATENED, ENDANGERED OR SENSITIVE SPECIES AND THEIR CRITICAL HABITATS: SUMMARY OF SPECIES LIFE HISTORY REQUIREMENTS AND SUIT DOCUMENTATION

SUMMARY OF SPECIES LIFE HISTORY REQUIREMENTS

The following summarizes the Federal, State (CPW and CNHP) species of concern life history requirements. These lists (and summaries) capture all of the BIA species of interest for the project area.

D 1.0 FEDERAL THREATENED, ENDANGERED AND CANDIDATE SPECIES

The project area was assessed to determine if any impacts could occur to potential habitat for threatened, endangered, and candidate species under the Endangered Species Act (ESA) (USFWS Western Colorado Ecological Services Field Office, 2011). Federally threatened and endangered species are protected under the ESA of 1973, as amended (16 U.S.C. 1531 et seq.). Significant adverse effects to a federally listed species or its habitat require consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 or 10 of the ESA. The USFWS provided a project-specific list (USFWS, Western Colorado, Ecological Services Field Office, September 2011b) encompassing several threatened and endangered species with potential habitat in the project area and La Plata County, or potentially affected by projects in La Plata County (**Table D.1** and also Attached to this Appendix). The following subsections provide a discussion of the species background while **Section 4** documents the potential effects attributable to the project.

Table D.1. Federally Threatened, Endangered, and Candidate Species Potentially found in La Plata County or Potentially Affected by Projects in La Plata County.

Common Name	Scientific Name	Status*	Habitat
Black-footed ferret	<i>Mustela nigripes</i>	E	Open grasslands with prairie dog colonies year-found (at least >80 acres in size).
New Mexico meadow jumping mouse	<i>Zapus hudsonius Leuteus</i>	C	Riparian areas dominated by shrubby vegetation.
Canada lynx	<i>Lynx canadensis</i>	T	Large tracts of high elevation (>8,000 ft) mixed coniferous forest.
North American wolverine	<i>Gulo gulo luscus</i>	C	Large, remote tracts of boreal forest and alpine tundra.
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	Dense, shrubby riparian vegetation, usually in close proximity to surface water or saturated soil.
Mexican spotted owl	<i>Strix occidentalis</i>	T	Mature to old growth mixed conifer stands on steep, north facing slopes with high snag and downed wood densities and high canopy closure.

Common Name	Scientific Name	Status*	Habitat
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	T ⁽¹⁾	Cottonwood forest with dense understory vegetation. Minimum habitat patch size 2 hectare (ha).
Bonytail chub	<i>Gila elegans</i>	E	Flowing pools and backwaters of the Upper Colorado River Basin.
Colorado pikeminnow	<i>Ptychocheilus lucius</i>	E	Large rivers with a strong current, deep pools, eddies, and quiet backwaters.
Humpback chub	<i>Gila cypha</i>	E	Flowing pools and swift, turbid rocky runs of the Upper Colorado River Basin.
Razorback sucker	<i>Xyrauchen texanus</i>	E	Rivers with strong, steady currents over sandy bottoms.
Rio Grande cutthroat trout	<i>Oncorhynchus clarki virginalis</i>	C	Found in gravel-bottomed creeks, lakes and small rivers primarily in the upper Rio Grande River watershed.
Knowlton's cactus	<i>Pediocactus knowltonii</i>	E	Rocky alluvial deposits in dry pinyon-juniper woodlands below 6,650 ft.
Schmoll's milk-vetch	<i>Astragalus schmolliae</i>	C	Thin, wind-deposited, sandy/gravelly soil on mesas.
Pagosa skyrocket	<i>Ipomopsis polyantha</i>	E	Shale outcrops around the Town of Pagosa Springs.
Uncompahgre Fritillary butterfly	<i>Boloria acrocynema</i>	E	large patches of snow willow above 3,780 meters (12,400 feet).

*T = Federally Threatened Species, E = Federally Endangered Species, C= Federally Candidate Species.

(1) The Yellow-willed cuckoo status was elevated to 'Threatened' in 2014.

Bold highlighted species identify those whose habitat may be impacted by the project.

Sources: USFWS 2011a and USFWS Western Colorado Ecological Services Field Office, 2011.

D 1.1 Black-Footed Ferret

The black-footed ferret (*Mustella nigripes*) (ferret) was listed as endangered in 1967 under a precursor to the ESA of 1973. The USFWS listed several factors related to the ferret declines (67 CFR 57558, 1988):

- 1) significant reduction in prairie dog numbers and distribution
- 2) conversion of native prairie to farmland, and
- 3) outbreaks of sylvatic plague and canine distemper.

Black-footed ferrets are associated with prairie dog colonies where they depend on this species for food and shelter (Fitzgerald et al. 1994). Ferrets average home range is 40 to 60 hectares; however, individuals may range between 1.2 to 258 hectares depending on sex and season (Fitzgerald and Lechleitner, 1974). Juveniles usually stay within 4 hectares of the natal den, but may disperse up to 7 km. in September/October.

Prior to the discovery of a population of black-footed ferrets in 1981 at Meeteetse, Wyoming, it was believed that this species was extinct. Currently, black-footed ferrets are known to exist only in the Shirley Basin of Wyoming, in captive breeding facilities in various locations across the country, and in various sites where captive reared ferrets have been reintroduced into the wild (Fitzgerald et al. 1994).

The last official record of a black-footed ferret in Colorado was near Buena Vista in 1943 (CPW, 2015cCPW). Despite considerable search time in western Colorado and on the eastern plains by various state and federal agency staff, no naturally occurring populations of black-footed ferrets have been found in Colorado (Fitzgerald et al. 1994). Since 2001, two black-footed ferret populations have been established in Colorado at Coyote Basin and at the Wolf Creek Management Area, both in the northwestern part of the State (CPW, 2015cCPW).

D 1.2 New Mexico Meadow Jumping Mouse

The New Mexico meadow jumping mouse (*Zapus hudsonius leuteus*) (jumping mouse) was listed as a candidate species on December 6, 2007 under the ESA (see Federal Register Vol. 72, No 234:69034-69106 12/3/98). This jumping mouse is endemic to New Mexico, Arizona, and a small area of southern Colorado (Hafner et al. 1981; Jones, 1999) including Montezuma, La Plata and Archuleta counties.

The jumping mouse is a habitat specialist (Frey, 2006). It nests in dry soils, but uses moist, streamside, dense riparian/wetland vegetation up to an elevation of about 8,000 feet (Frey, 2006). The jumping mouse appears to only utilize two riparian community types: 1) persistent emergent herbaceous wetlands (i.e., beaked sedge and reed canary grass alliances); and 2) scrub-shrub wetlands (i.e., riparian areas along perennial streams that are composed of willows and alders) (Frey, 2005). It especially uses microhabitats of patches or stringers of tall dense sedges on moist soil along the edge of permanent water.

The jumping mouse is generally nocturnal, but occasionally diurnal. It is active only during the growing season of the grasses and forbs on which it depends. During the growing season, the jumping mouse accumulates fat reserves by consuming seeds. Preparation for hibernation (weight gain, nest building) seems to be triggered by day length (USFWS, 20115a). The jumping mouse hibernates about 9 months out of the year, longer than most other mammals (Morrison, 1990; Frey, 2005). Identified threats to this species include excessive grazing, water use and management, highway reconstruction, development, recreation and beaver removal (75 FR 69238).

D 1.3 Canada Lynx

The Canada lynx (*Lynx Canadensis*) (lynx) was federally listed as threatened on March 24, 2000 (65 Fed. Reg. 16052). The lynx is a secretive forest-dwelling cat that historically was found throughout much of Canada and parts of the U.S., including the forests of northern tier states and subalpine forests of the central and southern

Rocky Mountains (Fitzgerald et al. 1994). Colorado is thought to be the southernmost distribution of the lynx (Fitzgerald et al. 1994).

Lynx habitat generally is described as climax boreal forest with a dense understory of thickets and windfalls. In the southern Rocky Mountains, primary lynx habitat is found in the subalpine and upper montane forests between 8,000 and 12,000 feet in elevation (USFWS, 2000). Subalpine forest habitat is dominated by subalpine fir and Engelmann spruce, while the upper montane forest supports lodgepole pine and aspen. Lower elevation montane forests of ponderosa pine, Douglas fir, and riparian corridors provide connective habitat that may facilitate dispersal and movement between primary habitats and provide additional foraging opportunities.

Lynx habitat in Colorado is fragmented naturally by elevation, dry south and west exposures, alpine tundra, open valleys, and shrubland. Threats to the lynx include private land development, urban growth, recreational development, and roads that affect landscape connectivity and access to primary lynx habitat.

D 1.4 North American Wolverine

The North American wolverine (*Gulo gulo*) is listed as a federal candidate species and state endangered and is considered one of the rarest mammals in North America. Between the 1800s and the mid-1900s, wolverines were extirpated from the Northeast, Upper Midwest, Great Lakes, and Central Great Plains, as well as from disjoint populations in the southern Rocky Mountains, Sierra Nevada's, and part of the Cascades. Based on the range contraction and the threats to the wolverine, the Service determined on December 14, 2010 that listing the wolverine as a distinct vertebrate population segment in the contiguous U.S. was warranted, but precluded the listing due to higher priority listing actions (75 Fed. Reg. 78030 (December 14, 2010)). Threats to the wolverine include habitat loss and fragmentation due to climate change, as well as harvest (mainly trapping), disturbance, development, and roads. Colorado is at the southernmost range of the wolverine, and no wolverines had been confirmed in Colorado since 1919 until a radio-collared male from the Grand Tetons was tracked in central Colorado in 2009 (Copeland et al. 2010).

Wolverines are restricted to boreal forests, tundra, and coniferous forests of western mountains in areas with reliable spring snow cover (Aubry et al. 2007). Wolverines need reliable spring snow cover (April 15 to May 15), which females depend on for natal denning (Aubry et al. 2007). Wolverines are also found in these areas during the summer, likely to avoid high summer (75 Fed. Reg. 78030 (December 14, 2010)). Across its range, 95 percent of summer and 86 percent of winter radio-telemetry locations are in areas with reliable spring snow cover (Copeland et al. 2010). Breeding occurs between late spring and early fall. Females undergo delayed implantation until the following winter or spring and give birth to one or two kits mid-February to March (75 Fed. Reg. 78030 (December 14, 2010)). Sub-adults become independent at nine months, but remain associated with the natal area until sexual maturity at about two years (Copeland, 1996; Copeland et al. 2007). Approximately 40 percent of females reproduce at two years of age (75 Fed. Reg. 78030 (December 14, 2010)).

Wolverines occur naturally in low densities – 1 per 25 to 130 square miles (75 Fed. Reg. 78030 (December 14, 2010)). Home range size varies depending on food availability, gender and age of animal, and habitat quality. Wolverines are opportunistic feeders and scavenge primarily on carrion, but also eat marmots; small animals and birds; and fruits, berries, and insects. In central Idaho, the average female home range was 148 square miles and average male home range was 588 square miles (Copeland, 1996).

The wolverine usually requires large tracts of wilderness because of its sensitivity to habitat fragmentation. Wolverines, particularly sub-adults, may make long exploratory movements and disperse long distances. Adults typically avoid roads (Copeland et al. 2007) with only sub-adults known to cross roads during exploratory movements or dispersal, (75 Fed. Reg. 78030 (December 14, 2010)). Female wolverines are sensitive to disturbance during the denning period and den sites are typically more than 2 miles from roads (75 Fed. Reg. 78030 (December 14, 2010)). Wolverines are also intolerant of activities that permanently change

land use accompanied by human activity and wolverines may be negatively associated with backcountry skiing and snowmobiling, although causal factors are not understood (Ruggiero et al. 2007).

D 1.5 Southwestern Willow Flycatcher

The Southwestern willow flycatcher (*Empidonax traillii extimus*) (flycatcher) was listed as endangered on March 29, 1995 (USFWS, 1995). Critical habitat was designated for the flycatcher October 19, which excluded all of Colorado, from critical habitat (70 FR 60968-60970). In response to a lawsuit, the USFWS proposed designation of revised critical habitat on August 15, 2011 with a final rule to be published by August 2012 (76 FR 50542-50629). The revised critical habitat proposal includes 28.6 miles of the Los Pinos River in La Plata County, Colorado. Proposed critical habitat extends from County Road 501, south through the Town of Bayfield and ends near the Colorado-New Mexico State Line (76 FR 50571). However, the proposed rule does acknowledge the limitations to habitat that are imposed by physical disturbance (i.e. the presence of buildings, highway corridors etc.). The flycatcher also is listed as endangered by the State of Colorado (USFWS, 1995).

The flycatcher is a riparian obligate species, about 5¾ inches long, with a light olive-green back and wings, a whitish throat and a lighter olive-green breast. In general, flycatchers breed in tall dense riparian habitat with low gradient streams, wetlands, or saturated soils usually nearby, at least early in the breeding season (Stafford and Valentine, 1985; Spencer et al. 1996; Finch and Stoleson, 2000). Breeding habitat at high elevation sites (greater than 6,200 feet) is characterized by one distinct vegetation layer and no over or understory layer. However, most breeding habitat contains dense branching and twig structure within the lower 6.5 feet (2 meters). In addition, proximity to water is important to flycatchers, with breeding territories often near slow-moving or standing water, a marsh, and/or saturated soils. The average canopy heights range from 10 to 23 feet (3 to 7 meters) (Sogge et al. 1997).

D 1.6 Mexican Spotted Owl

The Mexican spotted owl (*Strix occidentalis*) (spotted owl) is a federal and state threatened species. Primary threats cited for listing this species were alteration of habitat from past timber management practices and continued loss of habitat from these timber practices (58 FR 14248: March 16, 1993). The recovery plan for the Mexican spotted owl lists potential threats in the Colorado Recovery Unit, including catastrophic fire, recreation, urbanization, timber harvest, mineral development and grazing (Andrews and Righter, 1992).

The spotted owl is found from Colorado and Utah through portions of New Mexico, Arizona, and Texas, south to central Mexico. In Colorado, the spotted owl typically inhabits areas with steep exposed cliffs, canyons characterized by piñon-juniper, and old-growth forests mixed with Douglas-fir, ponderosa pine, and white fir (Andrews and Righter, 1992). The Mexican spotted owl nests in rugged mountainous-forested canyons generally between 6,500 and 9,500 feet in elevation.

D 1.7 Yellow-Billed Cuckoo

As of 2014, the Yellow-billed cuckoo status was elevated to 'Threatened'. The range of the western population segments includes areas west of the crest of the Rocky Mountains and extends to the eastern boundary of the Rio Grande drainage in southern Colorado and New Mexico (66 Fed. Reg. 38611 (July 25, 2001)).

The cuckoo is a secretive, medium-sized bird most often associated with streamside trees including cottonwood-willow groves (Kaufmann, 1996). The Colorado Breeding Bird Atlas has three records of cuckoos occurring in western Colorado. These records are from the Yampa and Uncompahgre rivers and were all associated with cottonwood woodlands (Carter, 1998). Yellow-billed Cuckoos recently recorded in the San

Luis Valley, occur in mature cottonwood forests with dense, large-saturated, willow understory with pools of standing stagnant water (Lucero and Cariveau, 2004).

D 1.8 Bonytail Chub

The bonytail chub (*Gila elegans*) is the rarest native fish in the Colorado River Basin, and is listed as endangered under the ESA (59 Fed. Reg. 13374 (March 21, 1994)). The bonytail chub has a streamlined body and typically achieves a maximum size of about 18 inches in length (Behnke and Benson, 1980). Historically, the bonytail chub was abundant and widespread in rivers throughout the Colorado River Basin (59 Fed. Reg. 13374 (March 21, 1994)). The current distribution of the species is limited to a small population in Lake Mojave and a few records exist from Lake Havasu and from the Yampa, Green, and Colorado Rivers (59 Fed. Reg. 13374 (March 21, 1994)). Wild populations consist only of older fish, and recruitment of younger fish is virtually non-existent (59 Fed. Reg. 13374 (March 21, 1994)).

The optimum habitat for bonytail chub appears to be open rivers of relatively uniform depth and current velocity (Behnke and Benson, 1980). The bonytail chub requires warm water temperatures of approximately 18 degrees C (64° F) for spawning (59 Fed. Reg. 13374 (March 21, 1994)). The cause of decline in this species is thought to be lower water temperatures as a result of construction of reservoirs (Woodling, 1985). Hybridization and competition with non-native fish may also be factors in the decline of this species.

D 1.9 Colorado Pikeminnow

The Colorado pikeminnow (*Ptychocheilus lucius*) is a fish that is endemic to the Colorado River Basin of the southwestern United States and is listed as endangered under the ESA. This fish was formerly known as the Colorado squawfish. Adults can reach a maximum size of up to 6 feet in length and 80 lbs in weight (USFWS, 2002a). Historically, the Colorado pikeminnow was found throughout lower elevation, warm waters of the Colorado River Basin (Behnke and Benson, 1980). Currently, the Colorado pikeminnow is found in the Green River and upper Colorado River basins, and there are small numbers of individuals (with limited reproduction) in the San Juan River basin (USFWS, 2002a). Habitat requirements of the Colorado pikeminnow include pools, deep runs, and eddy habitats (USFWS, 2002a). Colorado pikeminnow habitat is maintained by high spring flows that maintain the necessary channel and habitat diversity (USFWS, 2002a).

Spawning by Colorado pikeminnow in the Colorado and San Juan Rivers may have been adversely affected by construction of dams and reduction in peak flows (59 Fed. Reg. 13374 (March 21, 1994)). Additional threats to Colorado pikeminnow include stream-flow regulation, habitat modification, competition with and predation by non-native fish species, and pesticides and pollutants (USFWS, 2002a).

D 1.10 Humpback Chub

The humpback chub (*Gila cypha*) is endemic to the Colorado River Basin of the southwestern United States and is listed as endangered under the ESA. The distinguishing feature of this species is a prominent, rounded hump on the body, immediately behind the head. The hump is presumably an adaptation to maintain stability on the bottom of a stream in turbulent flow (Behnke and Benson, 1980). The historical distribution of this species is not well known, as the humpback chub was not described as a species until 1946. The original distribution of this species was presumably limited to swift, deep-water areas in the Colorado River Basin (Behnke and Benson, 1980). Presently, the species is restricted to areas in, and upstream of, the Grand Canyon (Woodling, 1985). The humpback chub is found in river canyons, where it uses a wide variety of habitats, including pools, riffles, rocky runs, rapids, and eddies (USFWS 2002b).

Threats to the humpback chub include reduced spring peak flows, availability of shoreline eddy and deep canyon habitats, and competition and predation by non-native fish species (59 Fed. Reg. 13374 (March 21, 1994)). Hybridization with other species may also be a threat to the humpback chub (59 Fed. Reg. 13374 (March 21, 1994)).

D 1.11 Razorback Sucker

The razorback sucker (*Xyrauchen texanus*) is a fish endemic to the Colorado River Basin of the southwestern United States, and is listed as endangered under the ESA. Adults reach a maximum size of approximately 3.3 feet in length and 11 lbs in weight (USFWS, 2002c). Historically, razorback suckers were widespread in warm-water reaches of the Colorado River Basin (USFWS, 2002c). Today, razorback suckers occur in small numbers in the Green River, upper Colorado River, San Juan River, lower Colorado River between Lake Havasu and Davis Dam, reservoirs of Lakes Mead and Mojave, Verde River, Salt River, and Fossil Creek (USFWS, 2002c). Razorback suckers inhabit a wide variety of habitats including impounded and riverine habitats, eddies, backwaters, gravel pits, flooded bottoms, flooded mouths of tributary streams, slow runs, sandy riffles, and others (59 Fed. Reg. 13374 (March 21, 1994)).

Dams that change the flow regime of rivers are thought to be the major cause of decline in populations of razorback suckers (Behnke and Benson, 1980). Threats to the razorback sucker include stream-flow regulation, habitat modification, predation by non-native fish species, and pesticides and pollutants (USFWS, 2002c).

D 1.12 Rio Grande Cutthroat Trout

The Rio Grande cutthroat trout (*Catostomus plebeius*) is a candidate species listed under the ESA. It is a subspecies of cutthroat trout endemic to the Rio Grande, Pecos and possibly the Canadian River basins in New Mexico and Colorado. Initial specimens were collected from Ute Creek in Costilla County, Colorado. They are distinguished by the red to orange slashes in the throat folds beneath the lower jaw. They have irregular shaped spots that are concentrated behind the dorsal fin and basibranchial teeth are minute or absent (Behnke, 2002).

D 1.13 Knowlton's Cactus

The Knowlton's cactus (*Pediocactus knowltonii*) is a small succulent listed as endangered in 1979 (44FR 62244-62246). This cactus has solitary or clustered stems, up to 5.5 cm tall, but usually only barely protruding from the soil. The stem is dotted with small projections, each encircled at the top by a ring of white spines. Pink with yellow-centered flowers typically bloom on top of the stems from mid-April through early May (NatureServe, 2011). This cactus occurs on tertiary alluvial deposits that have formed gravelly, dark, sandy loams on slopes or hills. It is found under the shade of trees and shrubs and in open areas in dry pinyon-juniper woodlands at 5905-6562 feet elevation. Only one viable population is known for this species, but it is known to, or believed to occur in La Plata County, Colorado.

D 1.14 Schmoll Milk-Vetch

The Schmoll's milk vetch (*Pediocactus knowltonii*) is a small perennial herb, 2-3 inches tall. Yellowish-white or cream-colored flowers bloom in May, followed by leathery pods in June. This milk vetch grows in thin, wind-deposited, sandy/gravelly soil on a mesa-tops and terraces between 6790 – 6990 feet (2070-2130 m) elevation (NatureServe, 2011). Frequently grows in openings among the pinyon and juniper, indicating that it may need some type of disturbance to establish itself. The species is only known to occur in Montezuma County in Colorado (NatureServe, 2011).

D 1.15 Pagosa Skyrocket

The Pagosa skyrocket (*Ipomopsis polyantha*) is listed as an endangered species by the ESA. It is a rare plant endemic to shale outcrops in and around the Town of Pagosa Springs in Archuleta County, Colorado. It is an herbaceous biennial 12 to 24 inches tall, branched from near the base above the basal rosette of leaves. It has deeply divided leaves with linear segments that are scattered up the stem. Stem and flower clusters are covered with glandular hairs. The white flowers are 0.4 inches long with short corolla tubes and flaring corolla lobes flecked with purple dots. Seeds germinate in Mancos shale more readily and rapidly than other types of soil (Porter and Johnson, 2000).

D 1.16 Uncompahgre Fritillary butterfly

The Uncompahgre fritillary butterfly (*Boloria acrocneuma*) (butterfly) was federally listed as endangered in 1991 (56 Fed. Reg. 28712 June 24, 1991). This species is a small butterfly known only to occur in the mountains of central and southern Colorado. This species occurs above 13,000 feet in stands of dwarf willow, its host plant (NatureServe, 2011). Threats to this species include over collection, improper grazing from domestic livestock, drought, disease, predation, and increased alpine recreation (USFWS, 1994). Prior to 1995, only two colonies of the butterfly were known to exist in southwestern Colorado. Between 1995 and 2000, six additional colonies were discovered mostly on Uncompahgre and Redcloud peaks (USFWS, 1994).

D 2.0 STATE ENDANGERED, THREATENED AND SPECIES OF SPECIAL CONCERN

Several species that potentially occur in La Plata County are considered endangered, threatened, or species of special concern by the State of Colorado. The CPWCPW 'known or likely species occurrence' database was cross referenced to the CPWCPW Threatened and Endangered List in order to derive a list of potential Colorado species of special concern (**Table D.2**) (CPW, 2015dCPWCPW). According to Colorado law (Colo. Rev. Stat. Ann. §§ 33-2-102-106), the State must maintain a list of species determined to be endangered or threatened within the State. State-listed wildlife species that are not already protected under the ESA are protected under State Statute 33, which is regulated by the CPWCPW.

The habitat requirements for each species are provided in the following discussion. No regulations currently exist for state species of concern. However, if any species were to be listed during construction, state regulations could be enforced.

Table D.2. Colorado Division of Wildlife Threatened and Endangered Species, and Species of Special Concern (CPW, 2015dCPW).

Common Name	Scientific Name (Status*)	Habitat
Gray wolf	<i>Canis lupus</i> (SE)	Occurs in a variety of habitats where large prey (primarily ungulates) occur.
Black-footed ferret	<i>Mustela nigripes</i> (SE)	Open grasslands with prairie dog colonies

Common Name	Scientific Name (Status*)	Habitat
		year-round.
Canada lynx	<i>Lynx Canadensis</i> (SE)	Large tracts of high elevation (>8,000 ft) mixed coniferous forest.
North American wolverine	<i>Gulo gulo luscus</i> (SE)	Large, remote tracts of boreal forest and alpine tundra.
River otter	<i>Lontra Canadensis</i> (ST)	Riparian habitats with an abundant food base of fish or crustaceans. Min. estimated water flow of 10 cfs.
Townsend's big-eared bat	<i>Corynorhinus townsendii pallescens</i> (SC)	Dry grasslands or forests associated with caves/mines. Forages in riparian, wetland and forest edge habitats.
American peregrine falcon	<i>Falco peregrinus</i> (SC)	Rugged terrain with rocky cliffs and canyons, 30-1000+ ft high, adjacent to rivers, lakes or streams.
Bald eagle	<i>Haliaeetus leucocephalus</i> (SC)	Primarily found around lakes, reservoirs and rivers. Large branched trees used for nesting, roosting and foraging.
Ferruginous hawk	<i>Buteo regalis</i> (SC)	Flat or rolling terrain in grassland, shrub-steppe and desert habitats.
Greater sandhill crane	<i>Grus Canadensis tabida</i> (SC)	Migrants use mudflats around reservoirs, agricultural fields, marshes and wet meadows. Breeding range does not include Colorado.

Common Name	Scientific Name (Status*)	Habitat
Gunnison sage grouse	<i>Centrocercus minimus</i> (SC)	Sagebrush shrub-steppes with low vegetation.
Long-billed curlew	<i>Numenius americanus</i> (SC)	Short-grass prairies or fields. Nests close to standing water.
Mexican spotted owl	<i>Strix occidentalis lucida</i> (ST)	Mature to old growth stands of mixed conifer in canyon/cliff habitat.
Yellow-billed cuckoo	<i>Coccyzus americanus</i> (SC)	Cottonwood forest with dense understory vegetation. Minimum habitat patch size 2 ha.
Boreal toad	<i>Bufo boreas</i> (SE)	Springs, streams, ponds, lakes and marshes in spruce-fir or sub-alpine forests or meadows at elevations . 7,000 ft.
Northern leopard frog	<i>Rana pipiens</i> (SC)	Wet meadows, marshes, ponds, lakes, reservoirs, streams and ditches.
Midget faded rattlesnake	<i>Crotalus viridis concolor</i> (SC)	Sagebrush desert with rocky outcrops, also plains grasslands, pinon-juniper and montane woodlands.

SE = Colorado Endangered Species, ST = Colorado Threatened Species, SC = Colorado Species of Special Concern.

Bold highlighted species is potentially impacted by *the project*.

Sources: CPW, 2015dCPW.

There are no recent records of the Gray wolf in La Plata County. This species is not addressed in this report; however, wolf populations continue to expand both north and south of Colorado and wolves could potentially occur within the project area during the life of the project. The Black-footed ferret, Canada lynx, North American wolverine, Mexican spotted owl, Yellow-billed cuckoo and appropriate fish species have already been addressed as federally listed species above (**Section D 1.0**).

D 2.1 River Otter

The River otter's (*Lontra Canadensis*) status in Colorado was recently changed from endangered to threatened. At one time, otters likely occurred in major streams statewide however with settlement and control of stream flows, the species has disappeared over time (CPW, 2015eCPW).

Otters live in riparian habitat, where aquatic animals like crayfish, frogs, fish, young muskrats and beavers are favored foods. Otters usually live in bank dens abandoned by beavers. The species are active mostly at dawn and dusk; and breed in spring (CPW, 2015eCPW).

D 2.2 Townsend's Big-Eared Bat

The Townsend's big-eared bat (*Corynorhinus townsendii*) (bat) is currently a species of special concern in Colorado. Threats to the species include disturbance of roosting areas (Sherwin et al. 2000; Schmidt, 2003). The bat use a variety of habitats including coniferous forest, desert shrublands, piñon-juniper woodlands, and pine forests (Jones et al. 1983). This species' range seems to be mesic habitats with coniferous and deciduous forests (Humphrey and Kunz, 1976) or associated with dry ponderosa pine and Douglas fir (Holroyd et al. 1994).

The bats have several categories of roost, which include maternity roosts, hibernacula, day and night roosts, and interim roosts. Most day roosts are found in caves and abandoned mines (Sherwin et al. 2000). Maternity roosts occur mostly in caves with multiple levels and openings. The few maternity colonies that occur in abandoned mines tend to move among several mines throughout the maternity period (Sherwin et al. 2000). In contrast, all known maternity colonies along the California coast are located in old buildings and other structures (Fellers and Pierson, 2002). Bridges are frequently used as night roosts in many western states including Colorado.

The bats forage primarily for insects over water or along the margins of vegetation (Fitzgerald et al. 1994). Female bats typically travel farther (an average of 2 miles) than males (0.8 mile) when foraging, primarily along the edges of riparian vegetation (Feller and Pierson, 2002).

The bat is found in the western United States, where it occurs in Idaho, Wyoming, Colorado, New Mexico, southern Kansas, Oklahoma, and Texas; with scattered populations in Arkansas, Missouri, Kentucky, Virginia, and West Virginia (Kunz, 1982). In Colorado, the bat is found over most of the western two-thirds and the extreme southeastern part of the state to elevations of approximately 9,500 feet (Fitzgerald et al. 1994). The abundance of the bat in Colorado is unknown.

D 2.3 American Peregrine Falcon

The American peregrine falcon (*Falco peregrines anatum*) (falcon) is currently listed in Colorado as a species of concern. In 1970, the falcon was listed as a federally endangered species. After a long recovery, the falcon was removed from the list of endangered species in August 1999. The falcon is currently protected under the MBTA, and the CPWCPW has recommended buffers around active nest sites. This wide-ranging species historically was found from coast to coast throughout North America (USFWS, 1984). The decline in the population of falcons in North America is attributed to pesticide poisoning on the wintering grounds, low breeding densities and reproductive isolation, and reduced availability of foraging habitat and avian prey (Finch, 1992).

Peregrines use a variety of different habitats for nesting, hunting, migrating, and wintering. Peregrines prefer nest sites on rugged remote cliffs 100 to 300 feet in height, usually overlooking water or marshy areas where

prey is abundant (USFWS, 1984). Nests can be found in the Rocky Mountains at elevations up to 11,811 feet (White et al. 2002). The peregrines' primary diet includes medium-sized birds such as jays, doves, flickers, shorebirds, and songbirds. Peregrines' preferred hunting areas include cropland, meadows, river bottoms, marshes, and lakes that attract abundant bird life. Peregrines may travel up to 29 kilometers (17 miles) from nesting cliffs to hunting areas (USFWS, 1984). Falcons can be found in downtown Denver, along the foothills, and to the western Colorado border. Falcons mate for life and will usually breed in March and April.

D 2.4 Bald Eagle

The Bald eagle (*Haliaeetus leucocephalus*) is a large North American bird with a historical distribution throughout most of the U.S. The bald eagle was listed as an endangered species in 1978. Population declines were attributed to habitat loss, the use of organochlorine pesticides, and mortality from shooting. Since its listing, the bald eagle population has been increasing. On July 9, 2007, the Service announced the delisting of the bald eagle from the threatened and endangered species list. Although removed from the list of threatened and endangered species, the bald eagle continues to be protected under the MBTA and the Bald and Golden Eagle Protection Act.

Most bald eagle nesting in Colorado occurs near lakes or reservoirs or along rivers. Typical bald eagle nesting habitat consists of forests or wooded areas that contain tall, aged, dying, and dead trees (Martell, 1992). Bald eagles seek aquatic habitat for foraging and typically prefer fish; although they also feed on birds, mammals, and carrion, particularly in winter (Buehler 2000; Sharps and Uresk, 1990).

D 2.5 Ferruginous Hawk

The Ferruginous hawk (*Buteo regalis*) is listed as a threatened species in Utah and is considered a species of special concern in Colorado, Arizona and Oklahoma but the USFWS rejected a petition to list the species under the ESA (CPWCPW, 2003; USFWS, 1992).

The Ferruginous hawk is one of the largest North American hawks measuring approximately 23 inches with a wingspan of 53 inches. This bird is distinguished by its pale head, rust coloring on back, shoulders and legs. When seen from below, the rust-colored legs form a dark V-shape and flight feathers lack barring. Immature birds lack the rust-colored leggings (CPWCPW, 2003).

The breeding range of the hawk is discontinuous throughout most of the western US. The range includes Pacific coastal states and extends eastward to the western portions of Texas, Oklahoma, Kansas, Nebraska and the Dakotas, and south to Arizona and New Mexico. Year-round range includes areas within Colorado. In Colorado, breeding areas have been noted to occur in the San Luis Valley, South Park and Colorado Plateau (CPWCPW, 2003).

D 2.6 Greater Sandhill Crane

The Greater sandhill crane (*Grus Canadensis*) is a species of special concern in Colorado. A total of six sandhill crane subspecies have been identified in North America including the three migratory subspecies inclusive of the Greater, Lesser and Canadian species. The total population for all sandhill cranes is estimated at about 800,000. The Greater sandhill crane has made a significant comeback from the mid-20th century. In 1940 the estimated population was only 1,000; now biologists believe there are about 100,000 (CPW, 2015fCPW).

The sandhill crane is a long-legged, long-necked bird with a vivid red forehead and brown-gray plumage. Adults have a white chin, cheek and upper throat. The young have a feathered head and chocolate-brown plumage. The cranes can be up to about four feet in length with a wingspan of up to 7 feet (CPW, 2015fCPW).

Breeding birds are found in parks with grassy hummocks and watercourses, beaver ponds and natural ponds lined with willows or aspens. They nest in wetlands and shallow marshes. Sandhill cranes feed in mudflats around reservoirs, moist meadows and agricultural areas. During migration and winter, sandhill cranes regularly feed in dry fields, returning to water at night (CPW, 2015fCPW).

D 2.7 Gunnison Sage Grouse

The Gunnison Sage grouse (*Centrocercus minimus*) is a newly classified, unique species of sage grouse found south of the Colorado River. The Gunnison sage grouse is a species of special concern in Colorado and is a candidate for listing under the federal ESA. Housing and human development, livestock grazing, water diversion projects and increased deer and elk populations have all contributed to the loss of habitat for the grouse. The Colorado Wildlife Commission eliminated hunting in areas occupied by this species (CPW, 2015aCPW).

This species is about one-third smaller than the typical grouse and males have distinct white tail feathers and filoplume. Female sage grouse have nearly the same plumage but are again about one-third the size of average grouse species (CPW, 2015aCPW).

D 2.8 Long-Billed Curlew

The Long-billed curlew (*Numenius americanus*) is a species of special concern in Colorado. Long-billed curlews appear to be declining in eastern parks of their breeding range such as the great plains, while they are slightly increasing in some areas including the Rocky Mountains. The curlew numbers have fallen in response to hunting and conversion of their grassland breeding habitat to agriculture and housing (Dugger and Dugger, 2002).

The curlew is a shorebird that probes sediment for insects, crustaceans and invertebrates. The long, down-curved bill allows curlews to forage for earthworms and other deep-burrowing prey such as invertebrates. Sometimes the curlew simply pecks at the ground eating grasshoppers, beetles, caterpillars spiders and occasionally small animals (Dugger and Dugger, 2002).

D 2.9 Boreal Toad

The Boreal toad (*Bufo boreas boreas*) is listed as a Colorado species of special concern and is Colorado's only alpine species of toad. The distribution of the toad is restricted to areas with suitable breeding habitat in spruce-fir forests and alpine meadows. Breeding habitat includes lakes, marshes, ponds, and bogs with sunny exposures and quiet, shallow water. The elevation range of the toad extends from 7,500 feet to approximately 12,000 feet in Colorado (CPW, 2015bCPW).

Females generally grow to 11 centimeters and males to 9 cm. Both sexes appear warty and usually have a light stripe along the middle of the back. Juveniles may have red warts (CPW, 2015bCPW).

D 2.10 Northern Leopard Frog

The Northern leopard frog (*Rana pipiens*) is listed as a Colorado species of special concern (CPW, 2015gCPW). This species typically inhabits the banks and shallow portions of wetlands, ponds, lakes, streams, and other

permanent bodies of water. The elevation range of the northern leopard frog extends from below 3,500 feet to approximately 11,000 feet in Colorado (Hammerson, 1999).

D 2.11 Midget Faded Rattlesnake

The Midget Faded Rattlesnake (*Crotalus viridis concolor*) is listed as a Colorado Species of Concern and is one of the smallest rattlesnakes in the Colorado Plateau Region of the United States. The Green River Formation in Southwestern Wyoming, Eastern Utah and Western Colorado makes up the entire range of this species. They typically occur below 7,000 feet in elevation and tend to prefer rocky outcrops in areas where sage is abundant (Travsky and Beauvais, 2004). Exposed rock outcrops provide important escape cover, thermal cover and safe hibernacula (Travsky and Beauvais, 2004). These animals typically reproduce biennially, triennially or even longer with parturition in late August to mid September (Ashton and Patton, 2001).

This species has long been considered a subspecies of the western rattlesnake (*C. viridis*), although there is some discussion of a taxonomic revision. Recent studies using mitochondrial DNA (mtDNA) and D-2 loop sequencing has suggested to elevate Midget Faded Rattlesnakes as well as others from the “western viridis complex” to full species status. In Colorado, Hammerson (1999) suggested that western rattlesnakes from southwestern Colorado (Montrose County southeast to La Plata and Archuleta counties) should be regarded as *viridis-concolor* intergrades or, preferably, as just *Crotalus viridis*.

D 3.0 OTHER SPECIES OF CONCERN

D 3.1 Migratory Birds

Migratory birds, as well as their eggs and nests, are protected under the MBTA. The MBTA does not contain any prohibition that applies to the destruction of a bird nest alone (without birds or eggs), provided that no possession occurs during the destruction. While destruction of a nest by itself is not prohibited under the MBTA, nest destruction that results in the unpermitted take of migratory birds or their eggs is illegal and fully prosecutable under the MBTA (Migratory Bird Permit Memorandum, U.S. Fish and Wildlife April 15, 2003). The regulatory definition of a take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect; or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.

Under the MBTA, the USFWS may issue nest depredation permits, which allow a permittee to remove an active nest. The Service, however, issues few permits and only under specific circumstances, usually related to human health and safety. Obtaining a nest depredation permit is unlikely and involves a process that takes from four to eight weeks. The best way to avoid a violation of the MBTA is to remove or disturb vegetation outside of the active breeding season, which typically falls between March and August, depending on the species. Public awareness of the MBTA has grown in recent years, and most MBTA enforcement actions are the result of a concerned member of the community reporting a violation.

It is recommended that all vegetation that may be impacted by project construction be removed from the site outside of the breeding season to avoid destroying any potential nests. If an active nest is identified within or near the project area, activities that would directly impact the nest, or that would encroach close enough to cause adult birds to abandon the nest during the breeding season, should be restricted.

D 3.2 Colorado Natural Heritage Program Critical Biological Resources

The Colorado Natural Heritage Program (CNHP) is Colorado’s comprehensive source of information on the status and location of Colorado’s rarest and most threatened species and plant communities. The CNHP was

contacted in order to obtain any available CNHP data available for the LAPLAWD area as a whole. Furthermore, recent inventory resources (Lyon et al., 2004 and March et al., 2004) were reviewed to determine if the project overlapped with any known species of concern or potential conservation areas (PCAs) identified to protect areas supportive of populations. **Table D.3** identifies all of the imperiled species within the La Plata County (Lyon et al., 2004). each CNHP PCA within the project proximity was evaluated in **Section D 3.3** below.

Table D.3. Colorado Natural Heritage Program Imperiled Species that are Known to Occur or have the Potential to Occur in La Plata County (Lyon et al., 2004).

Common Name	Scientific Name	Habitat
Gunnison's prairie dog	<i>Cynomys Gunnisoni</i>	Agricultural land that is irrigated or dry and some pinyon-juniper woodlands.
Grace's warbler	<i>Dendroica gracia</i>	Open pine forest, pine-oak associations.
Snowy egret	<i>Egetta thula</i>	Marshes, lakes, ponds and reservoirs.
American peregrine falcon	<i>Falco Pererinus Anatum</i>	Rugged terrain with rocky cliffs and canyons, 30-1000+ ft high, adjacent to rivers, lakes or streams.
Bald eagle	<i>Haliaeetus Leucocephalus</i>	Primarily found around lakes, reservoirs and rivers. Large branched trees used for nesting, roosting and foraging.
Black-necked stilt	<i>Himantopus Mexicanus</i>	Shallow water with soft muddy bottoms, grassy marshes, mudflats, flooded fields.
Wilson's phalarope	<i>Phalaropus Tricolor</i>	Idle, hayed and grazed grasslands adjacent to wetlands.
Forster's tern	<i>Sterna Forsteri</i>	Freshwater marshes.

Common Name	Scientific Name	Habitat
Gray vireo	<i>Vireo Vicinior</i>	Pinyon-juniper woodlands.
Roundtail chub	<i>Gila robusta</i>	Flowing pools and backwaters of the Upper Colorado River Basin.
Colorado river cutthroat trout	<i>Oncorhynchus clarki pleuriticus</i>	Clear, cold well-oxygenated mountain streams with moderate gradient.
New Mexico false carrot	<i>Aletes sessiliflorus</i>	Barren slopes with clay soils derived from the San Jose formation.
American spikenard	<i>Aralia racemeosa</i>	Shaded ravines or streamsides between 7,000 to 8,000 ft elevation.
Missouri milkvetch	<i>Astragalus missouriensis</i> vat. <i>Humistrata</i>	Clay soils from sandstone or shale of the Tertiary Nacimiento Formation.
Aztec milkvetch	<i>Astralagalus proximus</i>	Mesas, bluffs in sandy, alkaline clay soils from Lewis or Mancos shale.
Kittentails	<i>Besseyia ritteriana</i>	Mostly wet meadows or under trees in spruce fir forests at 10,000 to 13,000 ft elevation.

Common Name	Scientific Name	Habitat
Northern moonwort	<i>Botrychium pinnatum</i>	Grassy slopes, streambanks, forests and clearcut areas. Single occurrence in La Plata is in a spruce clearcut.
Green sedge	<i>Carex viridula</i>	Wetlands in montane alpine zone between 8,000 to 10,000 ft elevation.
Showy collomia	<i>Collomia grandiflora</i>	Oak thickets, sagebrush often in areas previously burned between 7,000 to 8,000 ft elevation.
Birdbell dayflower	<i>Commelina dianthifolia</i>	Steep rocky slopes in mixed montane forest.
Yellow lady's-slipper	<i>Cypripedium calceolus</i>	Wet areas in the subalpine zone.
San Juan whitlow-grass	<i>Draba graminea</i>	Gravelly tundra, shaded areas in crevices or base of cliffs at 12,400 to 13,500 ft elevation.
Showy whitlow-grass	<i>Draba spectabilis</i>	Spruce fir forests or open meadows along streams or wet slopes.
Colorado divide whitlow-grass	<i>Draba streptobrachia</i>	Rock outcrops within alpine zone at elevations from 10,800 to 13,500 ft.

Common Name	Scientific Name	Habitat
Altai cottongrass	<i>Eriophorum altaicum</i>	Wet meadows, fens or around ponds above or at treeline.
Russet cottongrass	<i>Eriophorum chamissonis</i>	Wetlands at high elevations such as 11,800 ft.
San Juan gila	<i>Gila haydenii</i>	Soils from sandstone or shale from 5,100 to 8,000 ft in canyonsides or desert shrub.
Variegated scouring rush	<i>Hippochaete variegata</i>	Lakeshores, riverbanks and ditches within Colorado blue spruce communities.
Colorado tansy-sister	<i>Machaeranthera coloradoensis</i>	Gravel or rock outcrops on sandstone or limestone from ponderosa pine communities to tundra.
Knowlton's cactus	<i>Pediocactus knowltonii</i>	Rocky alluvial deposits in dry pinyon-juniper woodlands below 6,650 ft.
Abajo penstemon	<i>Penstemon lentus</i>	Eroded soils within pinyon-juniper woodlands from 5,200 to 7,600 ft. elevation.
Pagosa phlox	<i>Phlox caryophylla</i>	Open areas within ponderosa pine zone.

Common Name	Scientific Name	Habitat
Western polypody	<i>Polypodium hesperium</i>	Crevices of rock outcrops or base of boulders in montane or subalpine zones.
Hoary willow	<i>Salix candida</i>	Wetlands with bog birch.
Altai chickweed	<i>Stellaria irrigua</i>	Barren scree slopes high in the mountains.
Gray's townsend-daisy	<i>Townsendia glabella</i>	Shale slopes with clay soils from Mancos shale in ponderosa pine zone between 6,500 to 8,500 ft. elevation.
Rothrock's Easter eaisy	<i>Townsendia rothrockii</i>	Dry rocky tundra above treeline.
New Mexico cliff fern	<i>Woodsia neomexicana</i>	Crevices of rocks or cliffs – not in soil.

Several species listed by CNHP were previously, comprehensively addressed in the previous sections (i.e. Peregrine falcon, Bald eagle and Knowlton's cactus). The Gunnison's prairie dog is the most likely species to occur within *the project* area, however no individuals or colonies were observed within or adjacent to the ROW corridors that encompass *the project*. The remaining imperiled species were primarily plants with distinct soil requirements or habitat settings that do not occur within *the project* area. Therefore none of the CNHP imperiled species were found to be potentially impacted by *the project*.

D 3.3 Colorado Natural Heritage Program Potential Conservation Areas

In order to successfully protect populations or occurrences of species of concern, the CNHP has delineated potential conservation areas (PCAs) throughout the La Plata County area (March et al., 2004). These PCAs focus on capturing the ecological processes that are necessary to support the continued existence of a particular element occurrence of natural heritage significance. Two PCAs were found to occur within the proximity of the project, but do not overlap. These PCAs include:

- 1) Los Pinos at Bayfield North PCA

2) Los Pinos at Bayfield South PCA

Both of these PCAs encapsulate a portion of the Los Pinos river due to the valuable biodiversity that occurs. These PCAs are outside of the proposed action and will not be directly impacted. Furthermore, the proposed action will not create any secondary or indirect impacts since it is aligned with existing roads and infrastructure. No 'new' natural environments will be impacted.

D 4.0 BIA/SUIT SPECIES OF CONCERN

The BIA and SUIT were consulted to scope the NEPA process. BIA and SUIT representatives provided the threatened and endangered species list applicable to the project (**Table D.4**). A list of threatened and endangered species from the USFWS, CPWCPW and CNHP was combined with species to be addressed on SUIT lands and documented within a Biological Assessment (can be made available if needed). The BA was reviewed by SUIT (Steve Whiteman) and approved (correspondence provided below).

SUIT (Steve Whiteman) Correspondence regarding review/approval of the Biological Assessment.

EMAIL correspondence to K. King from S. Whiteman (12/3/2013).

"Karmen –

The checklist looks complete to me. However, since Jim Friedley represents the lead federal agency (BIA) that will review/approve the EA for this project, I would say he is ultimately the one you really need to hear from regarding resources to include/not include. Also, I may have said this before, but for purposes of the threatened/endangered/sensitive species evaluation, it is only required that you consider the current 9 federal T&E species identified for the Reservation by USFWS. It is fine to address potential impacts to other special status species, but the only REQUIRED ESA effect determinations pertain to: Knowlton's cactus (E), Pagosa skyrocket (E), Canada lynx (T), New Mexico meadow jumping mouse (C), southwestern willow flycatcher (E), Mexican spotted owl (T), yellow-billed cuckoo (C), Colorado pikeminnow (E), razorback sucker (E). I agree with your determinations that this project will have no effect to these species or their habitats."

Steve Whiteman, Division Head
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Table D.4 2014 Threatened/Endangered/Candidate Species List for the Southern Ute Indian Reservation (February 25, 2014).

FC = Federal Candidate	FT = Federal Threatened	FE = Federal Endangered
<u>Birds</u>		
1. Yellow-billed Cuckoo (FC)		<i>Coccyzus americanus</i>
2. Mexican Spotted Owl (FT)		<i>Strix occidentalis lucida</i>

3. Southwestern Willow Flycatcher (FE)

Empidonax trailii extimus

Mammals

4. New Mexico Meadow Jumping Mouse (FC)

Zapus hudsonius luteus

5. Canada Lynx (FT)

Lynx canadensis

Fish

6. Razorback Sucker (FE)

Xyrauchen texanus

7. Colorado Pikeminnow (FE)

Ptychocheilus lucius

Plants

8. Knowlton's Cactus (FE)

Pediocactus knowltonii

9. Pagosa Skyrocket (FE)

Ipomopsis polyantha

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APPENDIX E
DOI-BLM-CO-S010-2013-0046 EA
RIGHT-OF-WAY STIPULATIONS

1. The holder shall contact the Authorized Officer (AO) at least 60 days prior to the anticipated start of any surface disturbing activities. It is the holder's responsibility to comply with all applicable Federal, State, and local laws and regulations existing or hereafter enacted or promulgated. The BLM will determine if any surveys or inventories are required. As necessary, the holder shall demonstrate compliance in writing, i.e., with surveys and inventories completed by qualified individuals, with the following laws including, but not limited to, the Endangered Species Act (if potential habitat is determined to be present), the National Historic Preservation Act, the Antiquities Act, the Archaeological Resources Protection Act and the Native American Graves Protection and Repatriation Act. Evaluations and inventories can be completed by BLM, or by the holder in order to meet the holder's schedule and subject to approval by the AO. It will likely take longer than 60 days to complete surveys and obtain approvals. The holder shall not initiate any surface disturbing activities on the right-of-way without prior written approval as determined necessary by the AO. Contact Jennifer Jardine, BLM Realty Specialist, at (970) 385-1224, or alternate Connie Clementson, Field Manager, at (970) 882-6808.
2. Any relocation, additional construction, or use that is not in accordance with the approved conditions shall not be initiated without the prior written approval of the authorized officer. A copy of the complete right-of-way grant, including all plans and stipulations shall be made available at the right-of-way site during construction. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health or the environment.
3. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder. The holder is responsible for informing all persons who are associated with the project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts.
4. Pursuant to 43 CFR 10.4(g), the holder of this authorization must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.
5. Use of pesticides/herbicides shall comply with the applicable Federal and state laws. Pesticides/herbicides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides/herbicides, the holder shall obtain from the authorized officer written approval of the applicant's plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the authorized officer. The plan should be submitted no later than March 1 of any calendar year to cover the proposed activities for the next growing season. Emergency use of pesticides/herbicides shall be approved in writing by the authorized officer prior to such use.

6. The holder shall be responsible for weed control within the limits of the right-of-way. The holder is responsible for consultation with the authorized officer and/or local authorities for acceptable weed control methods (within limits imposed in the grant stipulations) including pesticides/herbicides approved for use on BLM land.
7. The holder shall comply with applicable State standards for public health and safety, environmental protection and siting, construction, operation and maintenance, if these State standards are more stringent than Federal standards for similar projects.
8. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated regarding toxic substances or hazardous materials. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, section 102b. A copy of any report required or requested by any federal agency of state government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency of State government.
9. The authorized officer may suspend or terminate in whole, or in part, any construction or maintenance activities, when in his judgment, unforeseen conditions arise which result in the approved terms and conditions being inadequate to protect the public health and safety or to protect the environment.
10. All construction, operation and maintenance shall be within the authorized limits of the right-of-way granted herein.
11. All brush, grasses, and other woody material cleared from the right-of-way shall be removed from the public land and not scattered on site; unless the debris is used for reclamation as natural materials to enhance surface stability and re-vegetation efforts.
12. No burning of trash, litter, trees, brush or other vegetative material shall be allowed under this grant.
13. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support such equipment. If the equipment creates ruts in excess of four (4) inches deep, the soil shall be deemed too wet to adequately support the construction equipment.
14. The holder shall disturb the minimum amount of soils and vegetation necessary for the construction, operation, and maintenance of the facility. The holder shall re-contour disturbed areas as necessary by grading to restore the area to approximately the original contour of the ground as directed by the authorized officer.
15. The holder shall contact the AO to determine the appropriate seed mix to be used on all disturbed areas in the right-of-way. BLM places the following requirements on seed mixes which are put on BLM lands:

- 1) Use the following minimum PLS (Pure Live Seed) tolerances
PLS tested % Tolerance % points

81-100 -7
61-80 -6

41-60 -5

21-40 -4

0-20 -3

All seed must comply with BLM and Colorado weed seed guidelines. There should be no prohibited species seed, and no more than allowable levels of restricted species seed. In addition, there should be no more than 0.5% total weed seed, less than 2% other seed, and no trash larger than 1/4" in length. Seed shall not be stored in burlap bags.

2) The BLM Tres Rios Field Office places additional local restrictions on seed to minimize cheatgrass spread. If seed tests show any *Bromus tectorum* or *Bromus japonicus*, the BLM should be consulted with for approval. No mix placed on BLM shall contain more than 150 *Bromus tectorum* and/or *Bromus japonicus* seeds per pound.

3) BLM requires additional seed tests on seeding projects that are greater than 20 acres and/or require over 200 lbs of seed. For these seeding projects, the holder should have the seed supply company store the purchased seed prior to mixing, and pull samples to be sent to a certified laboratory, preferably Colorado State Laboratory at the following address. Seed test results must comply with the criteria listed above before seed is mixed, shipped and applied to the project area:

Colorado State Laboratory

Colorado State University

Department of Soil and Crop Sciences

Fort Collins, CO 80523

4) BLM will need copies of seed tags and test results for all seed applied regardless of project size.

5) Only State Certified weed free mulch shall be used.

16. For powerlines, unless otherwise agreed to by the authorized officer in writing, they shall be constructed in accordance to standards outlined in "Suggested Practices for Avian Protection on Powerlines: The State of the Art in 2006" (Avian Power Line Interaction Committee. 2006. Available at:

[http://www.aplic.org/uploads/files/2643/SuggestedPractices2006\(LR-2\).pdf](http://www.aplic.org/uploads/files/2643/SuggestedPractices2006(LR-2).pdf)). The holder shall assume the burden and expense of proving that pole designs not shown in the above publication are "eagle and raptor safe." Such proof shall be provided by a raptor expert approved by the authorized officer. The BLM reserves the right to require modifications or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States. All pole replacements will be brought up to this standard. For all maintenance activities that involve, but are not limited to, nest relocation or destruction, temporary possession, depredation, salvage/disposal, harassment, and scientific collection of raptors, the right-of-way holder shall provide the BLM with a copy of their current Migratory Bird Permit for those activities.

17. For access and maintenance of facilities, the holder shall use existing roads. When existing roads are not available, the holder may use the right-of-way for access. BLM roads should not be maintained without first consulting with the authorized officer.

18. Prior to termination of the right-of-way, the holder shall contact the authorized officer to arrange a joint inspection of the right-of-way. This inspection will be held to agree to an acceptable termination and rehabilitation plan as necessary. This plan shall include, but is not limited to, removal of facilities, drainage structures, or surface material, re-contouring, top-soiling, or seeding. The authorized officer must approve the plan in writing prior to the holder's commencement of any termination activities.

19. Per the BLM Wildlife Biologist and Ecologist, the holder shall conform to the following mitigation measures, including the attached Fish and Wildlife Clearance Report, to ensure the project has no effect on any federally listed or sensitive species:
- Construction activity and new surface disturbance will be prohibited during the period from December 1st to April 30th for the protection of elk and mule deer within winter and severe winter range. Any exceptions to this requirement must have prior written approval from the authorized officer.
 - To the extent possible, reptiles or amphibians observed in the project area will be avoided and will not be intentionally harmed.
 - Migratory Birds and Raptors: To minimize impacts on migratory bird populations, no surface disturbing activities may occur from May 1st through June 30th to avoid take of nesting migratory birds. If construction is desired during the nesting season, clearance activities may be conducted within 1 week of project activities taking place.
 - Surface disturbing activities or application of herbicide will not occur within 660 feet of known federally protected plant populations, or within 330 feet of known BLM sensitive plant populations. For small scale or less intensive treatments or activities (e.g., vegetation trimming, hand tool work, etc., as determined by a BLM biologist or ecologist), ground disturbing activities will not occur within 100 feet of known federally protected plants, or within 50 feet of known BLM sensitive plants. Appropriate sediment and erosion control, weed control, and similar practices will be applied as necessary to protect plant populations.